

# **EXHIBIT 49**

Patricia G. Moorman, M.S.P.H., Ph.D.

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IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY

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IN RE: JOHNSON & JOHNSON

TALCUM POWDER PRODUCTS MDL No.:  
MARKETING, SALES PRACTICES,  
AND PRODUCTS LIABILITY 16-2738 (FLW) (LHG)  
LITIGATION

THIS DOCUMENT RELATES TO  
ALL CASES

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VIDEOTAPED DEPOSITION OF  
PATRICIA G. MOORMAN, M.S.P.H., PH.D.

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FRIDAY, JANUARY 25, 2019

9:04 A.M.

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Taken by the Defendants  
at Cambria Hotel & Suites Durham  
2306 Elba Street  
Durham, North Carolina 27705

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Reported by Sophie Brock, RPR, RMR, RDR, CRR

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<p>1 A. That's correct.</p> <p>2 Q. You were deposed in the Ingham case.</p> <p>3 Do you recall the name of the case?</p> <p>4 A. Yes, I do.</p> <p>5 Q. And you were last deposed in that case in</p> <p>6 March of 2018. Do you recall that?</p> <p>7 A. Yes, I do.</p> <p>8 Q. Has there been any change in your employment</p> <p>9 status since your March 2018 deposition?</p> <p>10 A. I am still a professor at Duke University,</p> <p>11 yes.</p> <p>12 Q. Has there been any change in your work or</p> <p>13 teaching activities since your deposition?</p> <p>14 A. Yes.</p> <p>15 Q. What are those changes?</p> <p>16 A. I am in a preretirement transition, and so</p> <p>17 I have been reducing my effort. And so I do not --</p> <p>18 I'm not doing as much teaching as I was a year ago.</p> <p>19 Q. Other than that fairly significant change,</p> <p>20 are there any other changes in your teaching or work</p> <p>21 activities since the deposition?</p> <p>22 A. No.</p> <p>23 Q. Have you done any new expert witness work</p> <p>24 since the last deposition other than the talc MDL that</p> <p>25 we're here about today?</p>	<p>1 A. I'm afraid I'm a little bit unclear about the</p> <p>2 particular cases. I understand that this is an MDL</p> <p>3 case. I have been in touch with attorneys about</p> <p>4 various cases since, you know, 2016, but I'm a little</p> <p>5 bit unclear about the distinctions.</p> <p>6 Q. In preparing for today's deposition for the</p> <p>7 talc MDL, did you meet with counsel?</p> <p>8 A. Yes.</p> <p>9 Q. Okay. And who did you meet with?</p> <p>10 A. I have met with the individuals here,</p> <p>11 Michelle Parfitt, Steve Faries, Alastair, and -- I'm</p> <p>12 blanking on his last name all of a sudden -- and Jeff</p> <p>13 Gibson.</p> <p>14 Q. Are those the only attorneys that you've met</p> <p>15 with regard to your deposition today?</p> <p>16 A. Yes.</p> <p>17 Q. In preparing your MDL talc report, are there</p> <p>18 any other attorneys that you worked with other than</p> <p>19 the ones that you just mentioned with regard to the</p> <p>20 MDL?</p> <p>21 MS. PARFITT: Objection. Form.</p> <p>22 You may answer.</p> <p>23 I just wanted to make sure that -- I believe</p> <p>24 he's asking the names of people, not the</p> <p>25 communications.</p>
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<p>1 A. No, I have not.</p> <p>2 Q. And you understand that we are taking your</p> <p>3 deposition today in the talc MDL; correct?</p> <p>4 A. Yes.</p> <p>5 Q. Who first contacted you about serving as an</p> <p>6 expert in the talc MDL?</p> <p>7 A. It was -- let's see -- Jeff Gibson was the</p> <p>8 first person who contacted me about talc litigation.</p> <p>9 Q. When you say "talc litigation," are you</p> <p>10 referring to the Ingham case?</p> <p>11 A. I'm afraid that I'm a little unclear on --</p> <p>12 you know, there are multiple attorneys, multiple</p> <p>13 cases, and I don't know who was the Defendant and when</p> <p>14 he first approached me.</p> <p>15 Q. Understood.</p> <p>16 A. Or the Plaintiff, rather. I'm sorry.</p> <p>17 Q. Do you recall the time frame that Mr. Gibson</p> <p>18 contacted you?</p> <p>19 A. It was in summer of 2016.</p> <p>20 Q. Are you retained in any talc cases other than</p> <p>21 the talc MDL and the Ingham case?</p> <p>22 A. Not to my knowledge, no.</p> <p>23 Q. Sitting here today, do you have the ability</p> <p>24 to distinguish as to whether any attorney contacted</p> <p>25 you specifically about the talc MDL?</p>	<p>1 MR. JAMES: Yes.</p> <p>2 THE WITNESS: Okay. I believe that on</p> <p>3 teleconferences, Chris Tisi was also on one of the --</p> <p>4 at least one of the teleconferences, probably more</p> <p>5 than one.</p> <p>6 BY MR. JAMES:</p> <p>7 Q. Was Mr. Tisi involved in teleconferences</p> <p>8 pertaining to the report that you authored?</p> <p>9 A. Yes.</p> <p>10 Q. And, again, I'm not asking you about the</p> <p>11 substance of the communications, just the</p> <p>12 identification of the attorneys that you've worked</p> <p>13 with. Okay?</p> <p>14 A. Okay.</p> <p>15 Q. Are there any other attorneys that you've</p> <p>16 worked with on the MDL report?</p> <p>17 A. None that I recall.</p> <p>18 Q. Are you working with any of the counsel that</p> <p>19 you just identified on any other litigation or</p> <p>20 matters?</p> <p>21 A. No, I am not.</p> <p>22 Q. Okay. Today at the deposition, we'll follow</p> <p>23 the same ground rules as the Ingham deposition. So</p> <p>24 I know that you're familiar with them, but as a</p> <p>25 reminder, my questions will be verbal and I ask that</p>

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<p style="text-align: right;">Page 14</p> <p>1 your answers be verbal as well. Okay?</p> <p>2 A. Okay.</p> <p>3 Q. And that's so the court reporter can take</p> <p>4 down what you're saying and can take down what I'm</p> <p>5 saying as well.</p> <p>6 Also, Michelle has told you this, but</p> <p>7 anytime you need a break, just let us know and we'll</p> <p>8 be happy to accommodate you. Okay?</p> <p>9 A. Okay.</p> <p>10 Q. And if you have any -- if you have any -- let</p> <p>11 me rephrase that.</p> <p>12 If you don't understand any questions that</p> <p>13 I ask you, please ask me to rephrase. Okay?</p> <p>14 A. Okay.</p> <p>15 Q. Great.</p> <p>16 What are you charging Plaintiffs' counsels</p> <p>17 in the MDL?</p> <p>18 A. My rate is \$400 per hour.</p> <p>19 Q. How much have you invoiced in the MDL to</p> <p>20 date?</p> <p>21 A. For the MDL, I believe it is 21,000.</p> <p>22 Q. Okay. And prior -- sorry. Did I cut you</p> <p>23 off?</p> <p>24 A. No, you did not.</p> <p>25 Q. This morning, your counsel handed me a copy</p>	<p style="text-align: right;">Page 16</p> <p>1 MS. PARFITT: And I've just got to add</p> <p>2 some clarity to that.</p> <p>3 MR. JAMES: Sure.</p> <p>4 MS. PARFITT: There might be some</p> <p>5 overlap. I think that's the problem. There might</p> <p>6 just be some overlap.</p> <p>7 BY MR. JAMES:</p> <p>8 Q. Are there any invoices that you have prepared</p> <p>9 for your work in the talc litigation that you have not</p> <p>10 produced to us today in the MDL, be it Exhibit 1 or in</p> <p>11 your work in Ingham?</p> <p>12 A. These are the only invoices related to the</p> <p>13 talc litigation, period.</p> <p>14 Q. And do you have an estimate of -- when you</p> <p>15 say that these are the only invoices for the talc</p> <p>16 litigation -- and if these questions continue to be</p> <p>17 confusing, let me know -- but are there other invoices</p> <p>18 that you submitted in the Ingham case that are not</p> <p>19 part of Exhibit 1?</p> <p>20 A. No. These are all the invoices submitted.</p> <p>21 Q. We got there finally. Sorry about that.</p> <p>22 A. Okay.</p> <p>23 Q. Have you discussed your work in this</p> <p>24 litigation with any other experts who are working on</p> <p>25 behalf of the Plaintiffs?</p>
<p style="text-align: right;">Page 15</p> <p>1 of the invoices that you furnished in the MDL, and I'm</p> <p>2 going to mark this as Exhibit No. 1.</p> <p>3 (Exhibit No. 1 was marked for identification.)</p> <p>4 BY MR. JAMES:</p> <p>5 Q. Exhibit No. 1 is containing four invoices.</p> <p>6 I'm going to hand those to you and ask you to confirm</p> <p>7 that those are the invoices that you have prepared for</p> <p>8 your work in the MDL.</p> <p>9 A. There are some for -- that work that was done</p> <p>10 with the Ingham case, and my understanding, that's not</p> <p>11 part of the MDL.</p> <p>12 Q. That's fair. Yes.</p> <p>13 A. Okay.</p> <p>14 Q. So are the invoices that I've handed you as</p> <p>15 part of Exhibit 1, are those the invoices related to</p> <p>16 the work that you've done on the MDL?</p> <p>17 A. I -- I'm sorry. I'm -- I'm trying to answer</p> <p>18 your question, but the ones for prior -- other than</p> <p>19 the Ashcraft &amp; Gerel, my understanding was that these</p> <p>20 were for, like, the Ingham case and the state cases,</p> <p>21 not the MDL.</p> <p>22 Q. Okay. Let me ask it this way: Are these the</p> <p>23 invoices that you've submitted to Michelle Parfitt?</p> <p>24 A. They've been submitted to the people noted on</p> <p>25 there. So --</p>	<p style="text-align: right;">Page 17</p> <p>1 A. No. To my knowledge, I have not.</p> <p>2 Q. Have you had any emails or other</p> <p>3 communications with Plaintiffs' experts in the talc</p> <p>4 litigation?</p> <p>5 A. No, I have not.</p> <p>6 Q. And you recall giving your testimony in the</p> <p>7 Ingham case in March 2018; correct?</p> <p>8 A. Yes, I do.</p> <p>9 Q. After that testimony that you provided, you</p> <p>10 also had an opportunity to review that testimony;</p> <p>11 correct?</p> <p>12 A. I did.</p> <p>13 Q. And do you recall preparing a single</p> <p>14 correction to the Ingham transcript?</p> <p>15 A. Yes.</p> <p>16 Q. And so I have with me a copy of what we refer</p> <p>17 to as an errata sheet, which is the correction sheet</p> <p>18 that you signed in Ingham. I'm going to mark that as</p> <p>19 Exhibit No. 2. Okay?</p> <p>20 (Exhibit No. 2 was marked for identification.)</p> <p>21 BY MR. JAMES:</p> <p>22 Q. And the way that we're configured, there's</p> <p>23 some space between me and your counsel. So when</p> <p>24 I have exhibits, as I will throughout the day --</p> <p>25 we may have to figure out how to approach this, but I</p>

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<p style="text-align: right;">Page 18</p> <p>1 may hand them to you and ask that you hand them over  2 since we're all miked up.  3 Okay. And do you recognize your handwriting  4 on that Exhibit?  5 A. I do.  6 Q. Does that reflect the correction that you  7 made to your testimony?  8 A. Yes, it does.  9 Q. And if you flip over to the other side of  10 Exhibit 2, does that contain your signature?  11 A. Yes, it does.  12 Q. By signing that errata sheet, you confirmed  13 that the testimony that you gave in Ingham was true  14 and correct; correct?  15 A. Yes.  16 Q. Do you still stand behind the testimony that  17 you provided in Ingham today?  18 A. Yes, I do.  19 Q. Subject to the one correction that you made;  20 correct?  21 A. Yes, I do.  22 Q. Sitting here today, do you believe there are  23 any other changes or corrections that you need to make  24 to your testimony in Ingham?  25 A. I can't think of any, no.</p>	<p style="text-align: right;">Page 20</p> <p>1 A. I am.  2 Q. Okay. So for purposes of the record, this  3 morning, before the deposition, your counsel handed me  4 a copy of your updated CV.  5 Is that what you're looking at right now?  6 A. Yes, it is.  7 Q. Okay. I'm going to mark a copy of that as  8 Exhibit No. 3.  9 (Exhibit No. 3 was marked for identification.)  10 MR. JAMES: Michelle, you have a copy,  11 I presume?  12 MS. PARFITT: Actually, I think I gave  13 them all to you. Sorry.  14 MR. JAMES: Again, apologies for having  15 to handle it that way.  16 THE WITNESS: Oh, I'm sorry.  17 MS. PARFITT: Thank you.  18 THE WITNESS: Okay. The article that  19 I was referring to is -- the first author is Park.  20 The title of the article is "Benign gynecologic  21 conditions are associated with ovarian cancer risk in  22 African-American women: A case-control study."  23 And I was a coauthor on that paper, and talc  24 was included as a potential confounder.  25</p>
<p style="text-align: right;">Page 19</p> <p>1 Q. Did you review your Ingham deposition in  2 preparation for today's deposition?  3 A. I did within the last few weeks, yes.  4 Q. And so when you've reread the transcript in  5 the last few weeks, did you see anything in that  6 transcript that you wanted to correct?  7 A. No.  8 Q. Since your Ingham deposition in March of  9 2018, have you authored any publications or articles  10 pertaining to talc, asbestos, or ovarian cancer risk  11 factors?  12 A. Yes, I have.  13 Q. Okay. And let's break up that, then.  14 Have you authored any articles pertaining to  15 talc?  16 A. I have not authored any articles that  17 directly address talc as the main focus of the paper.  18 Talc has been mentioned in at least one paper as a  19 potential confounder.  20 Q. And what was the name of that article,  21 please.  22 A. If you'll give me just a moment, let me  23 look --  24 Q. Dr. Moorman, are you looking at a copy of  25 your CV?</p>	<p style="text-align: right;">Page 21</p> <p>1 BY MR. JAMES:  2 Q. And, for the record, can you tell us the  3 number of the item you're looking at on your CV?  4 A. Okay. On page 14, it is Article No. 120.  5 Q. And in that paper, Dr. Moorman, did you say  6 that you described talc as a potential confounder?  7 A. Yes.  8 Q. In that paper, did you include a disclosure  9 of your involvement in this talc litigation as an  10 expert for the Plaintiffs?  11 A. I disclosed it -- actually, I had a  12 discussion with the senior author on this paper, who's  13 Michele Cote, and disclosed what I was doing. And she  14 was -- she actually said she had also done some work  15 related to talc and ovarian cancer and she was going  16 to check with the editor and see if it required a  17 disclosure. And so there was no disclosure. So  18 apparently the editor did not feel it was warranted.  19 Q. So the article, as published, does not  20 contain a disclosure of your involvement in the  21 litigation; correct?  22 A. That is correct.  23 Q. Did you review the disclosure requirements of  24 the journal in which the article was published?  25 A. I can't remember if I specifically looked at</p>



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<p style="text-align: right;">Page 22</p> <p>1 that journal's requirements. I don't recall if I did 2 or not. 3 Q. Do you believe that it is important -- for an 4 author who's working on an article for a publication 5 pertaining to an issue that she's testifying about in 6 litigation, do you believe it's important to disclose 7 that to the reader of the article? 8 A. I think that it is important to disclose it 9 in conjunction with the journal's policies, as I 10 described. I did disclose it to the corresponding 11 author, who said she was going to discuss it with the 12 editor. So I think that I did what was appropriate. 13 Q. Did you communicate your involvement in the 14 litigation to anyone with the journal? 15 A. I did not. It is typical that the 16 communication with the journal is through the 17 corresponding author. 18 Q. Have you attempted to amend any disclosures 19 in your prior papers since the last deposition? 20 MS. PARFITT: Objection. Form. 21 THE WITNESS: I do -- 22 MR. JAMES: You're looking at your 23 counsel. Michelle can correct me if I'm wrong. She's 24 allowed to make the objections. And once she does, 25 unless she tells you not to answer, you may answer.</p>	<p style="text-align: right;">Page 24</p> <p>1 Q. Did they communicate with you about the 2 disclosure in a written format? 3 A. It was an email communication. 4 Q. Was it a single email, or was it multiple 5 emails? 6 A. As I recall, I sent an email to the editor 7 disclosing the situation, and he -- I think he 8 responded that, yes, it should be disclosed. And then 9 I believe there was another email from -- I don't 10 know -- an editorial assistant or someone asking 11 specifically what was the -- what was the wording of 12 the disclosure that I wanted to make, and I gave them 13 that. 14 So it was, you know, two or three emails, 15 but... 16 Q. Do you still have that email traffic in your 17 possession? 18 A. Probably. 19 Q. It's on your computer? 20 A. I would think so. 21 Q. Okay. Could you ensure that you preserve 22 that email traffic for us, please. 23 A. Yes. 24 MR. JAMES: And then, Michelle, we will 25 request a copy of the email traffic.</p>
<p style="text-align: right;">Page 23</p> <p>1 MS. PARFITT: That's fine. 2 THE WITNESS: Okay. Yes. In my last 3 deposition, there was an article that I was one of 40 4 authors that looked at about 20 different risk factors 5 for ovarian cancer. I acknowledged in my deposition 6 that it was an oversight. In my career, you know, 7 spanning 25 years, I've never had to make disclosures 8 about potential conflicts of interest. I acknowledged 9 that it was an oversight on my part. When it was 10 brought to my attention, I contacted the journal, and 11 they said, "Okay. What's your disclosure?" And 12 I disclosed it. 13 BY MR. JAMES: 14 Q. So just to be clear, this was after the 15 deposition; correct? 16 A. It was. 17 Q. Is this the Peres paper? 18 A. Yes. 19 Q. Did they respond to you in any way about the 20 reported conflict? 21 A. The editor just said, "Okay. What is your 22 disclosure?" 23 And I gave it to him. And I believe that 24 they subsequently published a correction to the 25 article.</p>	<p style="text-align: right;">Page 25</p> <p>1 MS. PARFITT: We'll certainly take it 2 under advisement, sure. 3 BY MR. JAMES: 4 Q. Do you have any similar written 5 communications about the disclosure with the paper 6 that we just discussed, the Park paper? 7 A. No, I do not. That was a telephone 8 conference. 9 Q. Other than the Park article that you just 10 identified, have you authored any other articles since 11 your last deposition concerning talc, asbestos, or 12 risk factors for ovarian cancer? 13 A. As you can see on my CV, since the last 14 deposition, Article No. 121 is a paper on effect of 15 cultural, folk, and religious beliefs on delays in 16 diagnosis of ovarian cancer. I was first author on 17 that paper. 18 Article 119, first author Anderson, was 19 looking at individual, social, and societal correlates 20 of health-related quality of life among 21 African-American survivors of ovarian cancer. 22 And I was a coauthor on a paper by Mills 23 that was looking at immune regulatory molecular 24 expression. 25 Q. Since your Ingham deposition, have you</p>



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<p>1 authored any articles that pertain to talc or asbestos</p> <p>2 other than the Park article?</p> <p>3 A. No.</p> <p>4 Q. Are you currently working on any articles or</p> <p>5 publications that pertain to the issues addressed in</p> <p>6 your expert report?</p> <p>7 A. I am a coauthor on a paper that is in</p> <p>8 preparation that is describing the OCWAA Consortium,</p> <p>9 which stands for Ovarian Cancer in Women of African</p> <p>10 Ancestry. And this is a relatively newly formed</p> <p>11 consortium, and it's describing the overall structure</p> <p>12 of the consortium and some of the factors that we</p> <p>13 intend to consider. And in the draft of the paper,</p> <p>14 talc is included along with a long list of other risk</p> <p>15 factors that we will be considering.</p> <p>16 Q. Is that paper in draft form?</p> <p>17 A. It is in draft form. It's being -- yeah, it</p> <p>18 has not been submitted yet.</p> <p>19 Q. So it has not been submitted for peer review?</p> <p>20 A. No, it has not.</p> <p>21 Q. Is talc mentioned in the context of a</p> <p>22 potential confounder, like the Park paper?</p> <p>23 MS. PARFITT: Object to form.</p> <p>24 THE WITNESS: Talc is mentioned in that</p> <p>25 paper as one of many ovarian cancer risk factors that</p>	<p>1 communications or written paperwork about your</p> <p>2 conflict for that paper? Your litigation disclosure</p> <p>3 for that paper? Is there anything in writing about</p> <p>4 that to anyone or the journal itself, or a journal?</p> <p>5 A. At this point, no, because it is still in</p> <p>6 draft form. It's not ready to be submitted.</p> <p>7 Q. Okay. Other than the papers we have</p> <p>8 discussed this morning, are there any other papers</p> <p>9 that you -- that are works in progress that discuss</p> <p>10 talc or asbestos that you're working on?</p> <p>11 A. Another paper that is in progress is looking</p> <p>12 at infertility as a risk factor for ovarian cancer.</p> <p>13 And talc is, again, considered as a potential</p> <p>14 confounder of that association.</p> <p>15 So, again, draft form. It hasn't been</p> <p>16 disclosed yet because it's not at the point where one</p> <p>17 would disclose that.</p> <p>18 Q. Okay. And you answered my next question, and</p> <p>19 that's fine. So thank you.</p> <p>20 Can you identify the coauthors on the paper</p> <p>21 that you've just -- that you just mentioned, the</p> <p>22 infertility paper?</p> <p>23 A. The infertility paper? Okay. This was work</p> <p>24 that was done with a medical student, Tolu Teniola is</p> <p>25 the medical student that I was working with. And then</p>
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<p>1 we hope to examine in this -- within this consortium.</p> <p>2 BY MR. JAMES:</p> <p>3 Q. So one of the purposes of that paper, as</p> <p>4 you've described, is that you will be looking at the</p> <p>5 association between talc and ovarian cancer; is that</p> <p>6 correct?</p> <p>7 MS. PARFITT: Objection. Form.</p> <p>8 THE WITNESS: It is -- the purpose of</p> <p>9 the paper is to describe the consortium. So there is</p> <p>10 relatively little data about risk factors for ovarian</p> <p>11 cancer among African -- African-American women, or</p> <p>12 women of African ancestry. And so the purpose of the</p> <p>13 paper is not focused just on talc, but it is</p> <p>14 describing how the consortium hopes to compare risk</p> <p>15 factors for ovarian cancer between African-American</p> <p>16 and white women. So talc is among a long list of risk</p> <p>17 factors that will be considered as we progress with</p> <p>18 this consortium.</p> <p>19 BY MR. JAMES:</p> <p>20 Q. Have you yet disclosed your involvement in</p> <p>21 the litigation with respect to that paper?</p> <p>22 A. The -- I will disclose it when the paper will</p> <p>23 be submitted, which is the typical time when such a</p> <p>24 disclosure would be made.</p> <p>25 Q. Have you engaged in any written</p>	<p>1 all of the AACES -- this is, again, African American</p> <p>2 Cancer Epidemiology Study, which is an ovarian cancer</p> <p>3 study that I've worked on for about the last nine or</p> <p>4 ten years, and so all of the collaborators on that</p> <p>5 study.</p> <p>6 And when you look at the CV, the papers that</p> <p>7 come from AACES, it's Dr. Schildkraut, Dr. Bondy,</p> <p>8 Dr. Cote. It's a large multicenter study; there are</p> <p>9 many coauthors, and so they would all be included.</p> <p>10 Q. And with respect to the other</p> <p>11 work-in-progress paper that you have identified, can</p> <p>12 you identify the coauthors on that paper.</p> <p>13 MS. PARFITT: Are you speaking of the</p> <p>14 infertility paper?</p> <p>15 MR. JAMES: The first question was</p> <p>16 about the infertility. So now we're back to the first</p> <p>17 work-in-progress paper that you identified.</p> <p>18 THE WITNESS: Okay. So the study</p> <p>19 describing the OCWAA Consortium, is that what you're</p> <p>20 asking me about?</p> <p>21 BY MR. JAMES:</p> <p>22 Q. Yes, Doctor. Thank you for clearing that up.</p> <p>23 A. Okay. So it includes -- again, this is a</p> <p>24 multicenter study -- quite a few coauthors. They</p> <p>25 would include Dr. Schildkraut, Lynn Rosenberg, Traci</p>

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<p style="text-align: right;">Page 30</p> <p>1 Bethea, Wendy Setiawan. 2 Again, it's a large consortium with a lot of 3 coauthors. There would be probably at least a dozen, 4 probably more. 5 Q. For both work-in-progress papers, are you 6 aware of whether any of those coauthors are experts 7 for the Plaintiffs in the talc litigation? 8 A. I am not aware of -- if any of them are. 9 Q. Have you -- are there any other works in 10 progress that pertain to talc or asbestos that you're 11 working on? 12 A. No, I do not believe so. 13 Q. Have you submitted the substance of your 14 opinions in the MDL report to anyone for peer review? 15 A. No, I have not. 16 Q. Have you engaged in any internet postings, 17 blogs, chatroom postings concerning your opinions in 18 this litigation? 19 A. No, I have not. 20 Q. Have you given any presentations, speeches, 21 or lectures concerning talc or asbestos or ovarian 22 cancer risk factors since your March 2018 deposition? 23 A. No, I have not. 24 Q. Have you given any interviews, public 25 statements, or other public speaking engagements</p>	<p style="text-align: right;">Page 32</p> <p>1 communications with your professional colleagues about 2 your opinions? 3 A. No, I have not. 4 Q. And when I say "about your opinions," I mean 5 about your opinions in this litigation. 6 Is there any written communications, emails, 7 or other writings expressing your opinions in this 8 litigation to your professional colleagues? 9 A. No, I do not believe so. 10 Q. Have you had any discussions, since your 11 Ingham deposition, with any healthcare professionals 12 who treat ovarian cancer patients about your 13 litigation opinions? 14 A. No, I have not. 15 Q. Have you prepared any letters to the editor 16 about any of the publications that you cite in your 17 MDL report? 18 A. No, I have not. 19 Q. Okay. I am going to hand you a copy of the 20 deposition notice for this case. I'm going to mark 21 that as Exhibit No. 4. 22 (Exhibit No. 4 was marked for identification.) 23 MR. JAMES: Michelle, do you need a 24 copy? 25 MS. PARFITT: I believe I might have</p>
<p style="text-align: right;">Page 31</p> <p>1 concerning talc, asbestos, or ovarian cancer risk 2 factors since your Ingham deposition? 3 A. No, I have not. 4 Q. Since your Ingham deposition -- and I'm 5 structuring my questions sometimes this way in hopes 6 of expediting. Okay? 7 So since your Ingham deposition, have you 8 discussed your opinions in this litigation with any of 9 your professional colleagues? 10 A. To some extent, yes. 11 Q. Okay. And can you tell me who that is? 12 A. I already mentioned Dr. Cote, Michele Cote, 13 described the work that I was doing. 14 I have mentioned some of the work that I'm 15 doing to some of my colleagues within my department, 16 Dr. Truls Ostbye for one, Dr. Kat Pollak for another. 17 Q. And when you say that you've mentioned your 18 litigation work with your department colleagues, what 19 have you told them? 20 A. I have basically described that I have been 21 working as an expert witness in this -- in this case, 22 and expressing my opinion, you know, that -- working 23 for the Plaintiffs and my opinion that talc is a cause 24 of ovarian cancer. 25 Q. And have you engaged in any written</p>	<p style="text-align: right;">Page 33</p> <p>1 given you mine. If you would be so kind, I appreciate 2 that. 3 MR. JAMES: Dr. Moorman. 4 THE WITNESS: Thank you. 5 BY MR. JAMES: 6 Q. Okay. Dr. Moorman, have you seen the 7 deposition notice that I just handed you before? 8 A. Yes, I have. 9 Q. Okay. And you understand from your prior 10 deposition, that this is a document that formally 11 notices the time and place and why we're here; right? 12 A. Yes. 13 Q. And if you turn to page 3 of the notice, you 14 see that there is a section for definitions, and then 15 it follows with a list of document requests; correct? 16 A. Yes. 17 Q. Okay. And your counsel this morning has 18 produced to me a copy of your invoices, a copy of your 19 updated CV, an additional-materials-considered list, 20 and has also indicated that the references to your MDL 21 report are going to be available to us on a thumb 22 drive. 23 Other than those materials that I just 24 described, are there any other materials that you've 25 brought with you today that respond to this deposition</p>

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<p style="text-align: right;">Page 34</p> <p>1 notice?</p> <p>2 A. No, there are no other documents.</p> <p>3 MR. JAMES: Michelle, is there anything</p> <p>4 else that you brought with you that is responsive to</p> <p>5 the deposition notice?</p> <p>6 MS. PARFITT: You know, the only thing</p> <p>7 that might -- I believe you asked this, Mr. James --</p> <p>8 any notes that she might have taken.</p> <p>9 MR. JAMES: Yes, I was going to ask</p> <p>10 that.</p> <p>11 MS. PARFITT: So why don't we just wait</p> <p>12 for that. I do have something for that.</p> <p>13 MR. JAMES: Okay. Fair enough.</p> <p>14 BY MR. JAMES:</p> <p>15 Q. Dr. Moorman, did you provide to your counsel</p> <p>16 any working copies of materials that you've reviewed</p> <p>17 for purposes of preparing your report or preparing for</p> <p>18 today's deposition?</p> <p>19 A. Can you tell me what you mean by "working</p> <p>20 copies"?</p> <p>21 Q. Sure. Have you made any notes on any of the</p> <p>22 materials that you reviewed for purposes of your work</p> <p>23 on the MDL?</p> <p>24 A. Yes. In this notebook here, there are</p> <p>25 articles. Most of them are the epidemiologic studies.</p>	<p style="text-align: right;">Page 36</p> <p>1 in your possession that are not contained in this</p> <p>2 binder?</p> <p>3 A. No. It's there and the report. That's it.</p> <p>4 MS. PARFITT: Mr. James, if we could,</p> <p>5 do you mind, could she have that back? In the event</p> <p>6 you start to ask her questions about it, she may want</p> <p>7 hers instead, and then we'll make sure you get it.</p> <p>8 Thank you.</p> <p>9 BY MR. JAMES:</p> <p>10 Q. And before we commenced this morning, your</p> <p>11 counsel, Ms. Parfitt, handed me a copy of the</p> <p>12 objections that they have lodged -- that the</p> <p>13 Plaintiffs have lodged to the deposition.</p> <p>14 MR. JAMES: Ms. Parfitt, do you want to</p> <p>15 mention that on the record?</p> <p>16 MS. PARFITT: Yes. If we could kindly</p> <p>17 have marked as Exhibit No. -- I believe it's 6 now.</p> <p>18 This is the Plaintiffs Steering Committee's Response</p> <p>19 and Objections to the Oral and Video Deposition of</p> <p>20 Dr. Patricia Moorman.</p> <p>21 Thank you.</p> <p>22 (Exhibit No. 6 was marked for identification.)</p> <p>23 BY MR. JAMES:</p> <p>24 Q. Dr. Moorman, I'm just going to hand you a</p> <p>25 copy of this because it looks like you're keeping a</p>
<p style="text-align: right;">Page 35</p> <p>1 And on some of them, I have notes that basically help</p> <p>2 me kind of categorize and -- categorize the articles</p> <p>3 and some of the main things that they looked at. You</p> <p>4 know, did they address dose-response? Did they look</p> <p>5 at histology? Those types of things. It was just to</p> <p>6 kind of help me sort them out.</p> <p>7 Q. And you brought that binder with you here</p> <p>8 today; correct?</p> <p>9 A. Correct.</p> <p>10 MR. JAMES: Michelle, I'm going to mark</p> <p>11 that as Exhibit No. 5.</p> <p>12 MS. PARFITT: You can. What I would</p> <p>13 ask, last evening we didn't have the ability to get</p> <p>14 everything copied. So what we will do is, we can mark</p> <p>15 that, and we'll make some arrangements to get that</p> <p>16 copied so we can get the originals back to</p> <p>17 Dr. Moorman.</p> <p>18 MR. JAMES: Sure. That's fine.</p> <p>19 So I'm going to mark this binder</p> <p>20 Exhibit No. 5.</p> <p>21 (Exhibit No. 5 was marked for identification.)</p> <p>22 BY MR. JAMES:</p> <p>23 Q. Dr. Moorman, other than what you've provided</p> <p>24 to me in Exhibit No. 5, are there any other notes or</p> <p>25 working copies of materials considered that you have</p>	<p style="text-align: right;">Page 37</p> <p>1 pile over there for us of all the exhibits. Okay?</p> <p>2 I'm not going to ask any questions about it.</p> <p>3 A. Okay.</p> <p>4 Q. Okay. Dr. Moorman, in anticipation -- or in</p> <p>5 preparation for your work on the MDL, or in</p> <p>6 conjunction with your work on the MDL, you also</p> <p>7 authored an expert report; correct?</p> <p>8 A. That is correct.</p> <p>9 Q. I'm going to mark a copy of that as</p> <p>10 Exhibit No. 7. And we'll be talking about this</p> <p>11 throughout the day today. Okay?</p> <p>12 A. Okay.</p> <p>13 (Exhibit No. 7 was marked for identification.)</p> <p>14 Q. Okay. I'm handing you Exhibit 7. Is that a</p> <p>15 copy of your report that you've authored in the MDL?</p> <p>16 A. Yes, it is.</p> <p>17 Q. Do you agree that the report defines the</p> <p>18 scope of the opinions that you intend to offer in the</p> <p>19 MDL?</p> <p>20 A. Yes.</p> <p>21 MS. PARFITT: If I may, Scott, may</p> <p>22 I just see a copy of that report?</p> <p>23 MR. JAMES: I have extra copies as</p> <p>24 well, Michelle. If you need anything, just let me</p> <p>25 know.</p>

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<p style="text-align: right;">Page 38</p> <p>1 MS. PARFITT: Thank you. That would be 2 great. 3 MR. FARIES: I'll be the runner on this 4 one. 5 MR. JAMES: Thank you. 6 BY MR. JAMES: 7 Q. Did you review your report prior to -- in 8 preparation -- let me start that over. 9 Did you review your report in preparation 10 for today's deposition? 11 A. Yes, I did. 12 Q. Are there any changes that you want to make 13 to the report today? 14 A. No, there are not. 15 Q. Did you write the report? 16 A. Yes, I did. 17 Q. Okay. Are all parts of the report in your 18 wording? 19 A. Yes. 20 Q. Okay. If you can turn with me, Dr. Moorman, 21 to page 41. And you see here that there is a list of 22 references; correct? 23 A. Yes. 24 Q. Okay. And if you also turn to page 50, do 25 you see that there's a separate list that begins on</p>	<p style="text-align: right;">Page 40</p> <p>1 transcript for Curtis Omiencinski, I do not recall 2 reviewing that at all. It might have been provided to 3 me, but I don't recall reviewing it. 4 Q. Is there any way sitting here today that we 5 can efficiently identify which items on the additional 6 materials list that you have reviewed and which you 7 haven't? 8 A. I don't know what you mean by "efficiently." 9 You know, it's kind of hard to recall exactly. You 10 know, there are lots of articles here. That might 11 have been provided to me. I don't know how I could go 12 through it in just a few minutes to say did I look at 13 it or not. It would just take some time. 14 Q. Did Plaintiffs' counsel provide you all the 15 items on this list, the additional materials list? 16 A. No, I don't believe so. I mean, some of the 17 articles I've had -- like, again, some of them just 18 kind of jump out at me, like the reference 31, 19 Fathalla, "Incessant ovulation and ovarian cancer, a 20 hypothesis," that is an article that I have probably 21 referred to dozens of times. 22 Q. So the additional materials list contains a 23 mixture of items that you had on your own and items 24 that were provided to you; is that fair? 25 A. That is correct.</p>
<p style="text-align: right;">Page 39</p> <p>1 page 50, halfway down, that's titled "Additional 2 materials and data considered"? 3 A. I'm sorry -- 4 Q. On page 50. 5 A. -- let me get to the right page. 6 Yes. 7 Q. Can you explain to me the difference between 8 the reference list and the additional materials and 9 data considered list? 10 A. Okay. The reference list are the references 11 to support the opinions and the statements in the 12 report that I wrote. There are some other materials 13 that I was provided, might have read, but they just 14 did not meet the level of actually needing to be 15 referenced in the report to support a certain 16 statement. 17 Some of these I might have read in more 18 detail than others, but I feel like the reference list 19 are the ones that actually supported the statements 20 that I made in my report. 21 Q. As described by you just now, are there items 22 on the additional materials and data considered list 23 that you have not reviewed at all? 24 A. There are -- along the way, there seem to be 25 some -- like, for example, item 62, comparing a</p>	<p style="text-align: right;">Page 41</p> <p>1 Q. Now, do you intend to rely on any materials 2 for your opinions in this case that are not identified 3 in the reference list or the additional materials 4 list? 5 MS. PARFITT: Objection. Form. 6 THE WITNESS: I mean, I am relying on 7 the expertise that I developed over more than 25 years 8 as an epidemiologist. And so there may be 9 publications, knowledge that I have that is not 10 specifically listed here. But, in general, I think 11 that is a fairly comprehensive list. I don't know 12 that I could say that it is completely exhaustive. 13 BY MR. JAMES: 14 Q. All right. I'm going to mark now as 15 Exhibit No. 8 a copy of a list entitled "Additional 16 Materials to Dr. Patricia Moorman." 17 (Exhibit No. 8 was marked for identification.) 18 BY MR. JAMES: 19 Q. Have you seen a copy of Exhibit 8 before, 20 Dr. Moorman? 21 A. I don't think that I have seen this 22 particular list. 23 MS. PARFITT: And for the record, this 24 list was compiled by Plaintiffs' counsel, Mr. James, 25 and I'm not sure whether or not my office -- the</p>

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<p style="text-align: right;">Page 42</p> <p>1 materials were sent, but I'm not sure whether the list  2 was sent to Dr. Moorman.  3 MR. JAMES: Okay.  4 BY MR. JAMES:  5 Q. Looking at this list, Dr. Moorman, this list  6 was furnished to us this week.  7 Do you understand that?  8 MS. PARFITT: Objection.  9 THE WITNESS: I -- if you say so.  10 BY MR. JAMES:  11 Q. Fair enough. This list -- does this list  12 include items that you were provided after you  13 authored your MDL report?  14 A. Yes.  15 Q. This list of materials did not form the  16 opinions that you included in your MDL report;  17 correct?  18 MS. PARFITT: Objection. Form.  19 THE WITNESS: I did not have access,  20 you know, to these expert reports and all before  21 I wrote my report, no. So they did not inform my  22 report.  23 BY MR. JAMES:  24 Q. Have you reviewed the materials on this list  25 as Exhibit No. 8 in their entirety?</p>	<p style="text-align: right;">Page 44</p> <p>1 reports have you reviewed?  2 A. Again, I have reviewed them in different  3 levels of detail and completeness. But I have looked  4 at the report of Anne McTiernan, April  5 Zambelli-Weiner, Daniel Clarke-Pearson, David Kessler,  6 Jack Siemiatycki, Michael Crowley, Rebecca  7 Smith-Bindman, and Sonal Singh, you know, to some  8 extent.  9 And I might have looked at some of the  10 others, but those were the ones that I specifically  11 recall looking at to some extent.  12 Q. Did you ask for Plaintiffs' counsel to  13 furnish you the expert reports in the litigation?  14 A. I did not. They provided them to me without  15 asking.  16 Q. Why did you review the reports of the other  17 experts?  18 A. Intellectual curiosity is the main thing.  19 I'm always interested to learn other people's  20 perspectives. And also to see if there was any  21 additional evidence that I might consider.  22 Q. And after reviewing those reports, did you  23 find any additional evidence that you might consider  24 that you didn't list in your MDL report?  25 A. I really didn't. I thought that there was a</p>
<p style="text-align: right;">Page 43</p> <p>1 A. No, not in their entirety.  2 Q. Have you reviewed some and not reviewed  3 others? Is that fair?  4 A. I have -- yes, I have reviewed some of them.  5 I have not reviewed all of them.  6 Q. Okay. Is there any way for us to, again,  7 efficiently determine today which of these you've  8 reviewed and which ones you haven't?  9 A. I -- again, I could go through them and, to  10 the best of my knowledge, tell you which ones  11 I reviewed. Again, some of them I reviewed in more  12 detail, read more completely; others I looked at  13 more -- in a more cursory way.  14 Q. Did your review of any of these additional  15 materials change the opinions that you've included in  16 your MDL report?  17 A. No, they did not change my opinion.  18 Q. Did you review all of these expert reports  19 listed?  20 A. I did not review all of them. I reviewed  21 some of them.  22 Q. Okay. And these are the Plaintiffs' expert  23 reports that are listed on this list; correct?  24 A. That is my understanding.  25 Q. Okay. Which of the Plaintiffs' expert</p>	<p style="text-align: right;">Page 45</p> <p>1 remarkable level of consistency in the opinions,  2 particularly among the people who were reviewing the  3 epidemiologic literature.  4 Q. Dr. Moorman, I am going to now hand you a  5 copy of the reliance materials -- which is the title  6 of the list -- that you cited in the Ingham case.  7 Okay? I'm going to mark that as Exhibit No. 9.  8 (Exhibit No. 9 was marked for identification.)  9 BY MR. JAMES:  10 Q. Does that list look familiar to you?  11 A. Yes.  12 Q. And you see on the front of that list, it  13 says it was produced on March 5th, 2018; correct?  14 A. That is correct.  15 Q. And did you prepare this list?  16 A. I did not personally prepare it, no.  17 Q. Do you know that the reliance list that you  18 produced in Ingham and the reliance list that you have  19 attached as a reference list and a materials  20 considered list to your MDL report are substantially  21 different?  22 A. I would --  23 MS. PARFITT: Objection. Form.  24 THE WITNESS: I would not be surprised  25 to say that there are some different references cited,</p>



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<p style="text-align: right;">Page 46</p> <p>1 yes.</p> <p>2 BY MR. JAMES:</p> <p>3 Q. Do you understand that there's a large number</p> <p>4 of additional references that you have now cited in</p> <p>5 your MDL report?</p> <p>6 A. I -- the reference list is longer, yes.</p> <p>7 Q. Do you have any idea by how much?</p> <p>8 MS. PARFITT: Objection. Form.</p> <p>9 THE WITNESS: No, I do not.</p> <p>10 BY MR. JAMES:</p> <p>11 Q. Would it surprise you to find out that there</p> <p>12 are 94 new items listed in your MDL report that were</p> <p>13 not listed in your March 2018 report?</p> <p>14 MS. PARFITT: Objection. Form.</p> <p>15 THE WITNESS: I -- you know, as you go</p> <p>16 along, I think that it is not unusual to include more</p> <p>17 references. I didn't know the exact number of new</p> <p>18 items.</p> <p>19 BY MR. JAMES:</p> <p>20 Q. Again, did you prepare the lists that are</p> <p>21 attached to your MDL report?</p> <p>22 A. The -- the list of references, I prepared</p> <p>23 that. The list of additional items, I think that was</p> <p>24 a combination of some of what I had prepared and</p> <p>25 I think what counsel had provided to me.</p>	<p style="text-align: right;">Page 48</p> <p>1 have become part of the public domain since that time.</p> <p>2 Do you understand that?</p> <p>3 MS. PARFITT: Objection. Form.</p> <p>4 THE WITNESS: I understand that some of</p> <p>5 them had been published before my deposition in March</p> <p>6 2018.</p> <p>7 BY MR. JAMES:</p> <p>8 Q. Are there specific topics of the new</p> <p>9 materials that you added between your Ingham</p> <p>10 deposition and your MDL report?</p> <p>11 A. I'm trying to think what they might be. I --</p> <p>12 some -- I think that some of the work, for example, by</p> <p>13 Fletcher and Saed describing some of their work</p> <p>14 related to possible biological mechanisms by which</p> <p>15 talc exposure could lead to ovarian cancer -- I think</p> <p>16 that was some work that I, perhaps, had not been aware</p> <p>17 of previously. And so that's one thought that comes</p> <p>18 to mind.</p> <p>19 Q. All of the items that you added from March</p> <p>20 2018 Ingham list to your MDL list, were all of those</p> <p>21 items provided to you by Plaintiffs' counsel?</p> <p>22 MS. PARFITT: Objection. Asked and</p> <p>23 answered.</p> <p>24 THE WITNESS: I don't -- I don't think</p> <p>25 so.</p>
<p style="text-align: right;">Page 47</p> <p>1 Q. When you provided your opinion in March of</p> <p>2 2018 in the Ingham case, did you do so based on a</p> <p>3 comprehensive review of the literature?</p> <p>4 A. I think that -- yes, I believe that it was a</p> <p>5 comprehensive review, particularly of the</p> <p>6 epidemiologic data.</p> <p>7 Q. Why did you expand your list of references</p> <p>8 and materials considered for the MDL?</p> <p>9 A. I think just as you acquire, you know, become</p> <p>10 aware of more references, maybe if there were any new</p> <p>11 publications, or just as I expanded the knowledge,</p> <p>12 I think that it would be appropriate to include more</p> <p>13 references.</p> <p>14 Q. Do you know that a number -- a large number</p> <p>15 of the new references and materials considered were</p> <p>16 available in the public domain or in the -- in this</p> <p>17 litigation at the time that you gave your March 2018</p> <p>18 deposition?</p> <p>19 MS. PARFITT: Objection. Form.</p> <p>20 THE WITNESS: It would not surprise me</p> <p>21 to say that -- to see that some of them were there.</p> <p>22 BY MR. JAMES:</p> <p>23 Q. So, to be clear, the additional materials</p> <p>24 that you have added between March 2018 and your MDL</p> <p>25 report, those materials are not simply materials that</p>	<p style="text-align: right;">Page 49</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Would you say the majority of the items that</p> <p>3 you've added from March 2018 to your MDL report were</p> <p>4 provided to you by Plaintiffs' counsel?</p> <p>5 MS. PARFITT: Objection. Form.</p> <p>6 THE WITNESS: I don't know what</p> <p>7 quantity, what fraction was provided by counsel and</p> <p>8 which I identified.</p> <p>9 MR. JAMES: Okay. I'm going to mark as</p> <p>10 Exhibit No. 10 a copy of your references and materials</p> <p>11 considered list for the MDL report.</p> <p>12 (Exhibit No. 10 was marked for identification.)</p> <p>13 BY MR. JAMES:</p> <p>14 Q. Okay. Dr. Moorman --</p> <p>15 MS. PARFITT: Just one correction,</p> <p>16 Mr. James. I think Exhibit 10 is just identified as</p> <p>17 "references." I believe you characterized it as</p> <p>18 "references and material considered."</p> <p>19 MR. JAMES: Yeah. I think if you keep</p> <p>20 flipping, Michelle -- or Ms. Parfitt -- it contains</p> <p>21 both.</p> <p>22 MS. PARFITT: Fair enough.</p> <p>23 BY MR. JAMES:</p> <p>24 Q. Okay. And you see, Dr. Moorman, if you've</p> <p>25 had a chance to flip through it while counsel have</p>

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<p style="text-align: right;">Page 50</p> <p>1 been talking, you see that this Exhibit 10 includes 2 some highlighting; right? 3 A. Yes. 4 Q. The highlighting, I'll state for the record, 5 represents our effort to capture the items that have 6 been added between Ingham and your MDL report. 7 Do you see that highlighting? 8 A. Mm-hmm. 9 Q. Again, I think we discussed this earlier, but 10 does it surprise you to find out that there are 94 new 11 items on the two MDL lists? 12 MS. PARFITT: Objection. Asked and 13 answered. 14 THE WITNESS: Again, I believe that 15 I answered that question previously. 16 BY MR. JAMES: 17 Q. 13 of the 20 references that are new were 18 available to you as of March 2018. Did you know that? 19 MS. PARFITT: Objection. Asked and 20 answered. 21 THE WITNESS: Again, I answered the 22 question when you asked it previously. 23 BY MR. JAMES: 24 Q. I don't think that we've talked specifically 25 about the references, but the references -- the</p>	<p style="text-align: right;">Page 52</p> <p>1 "search terms" or the primary search that was done, it 2 was very simple. It was "talc" or "talcum powder" and 3 "ovarian cancer." But many times, the initial search 4 will not generate all of the articles that you would 5 need to describe the science. There may be additional 6 articles, either things that I was aware of or 7 different searches that might be done. 8 But the overall search term to find the 9 literature on talc and ovarian cancer, I did not 10 change that. 11 Would it be a good time to take a break? 12 We've been going for over an hour. 13 MR. JAMES: For sure. 14 MS. PARFITT: Certainly. 15 THE VIDEOGRAPHER: Going off record at 16 10:05 a.m. 17 (Recess taken from 10:05 a.m. to 10:18 a.m.) 18 THE VIDEOGRAPHER: Back on record at 19 10:18 a.m. 20 BY MR. JAMES: 21 Q. Dr. Moorman, are you ready to proceed? 22 A. I am. 23 Q. Great. Dr. Moorman, do you consider yourself 24 to be an expert in animal studies and talc? 25 A. No, I do not.</p>
<p style="text-align: right;">Page 51</p> <p>1 references that you've cited to your MDL report, those 2 are materials that you say form the opinions issued in 3 your MDL report; correct? 4 A. Yes. 5 Q. And you added 20 new references from your 6 Ingham list to your MDL report. Do you know that? 7 A. I know that there are new references, yes. 8 Q. And did you know that 13 of the 20 new 9 references -- again, the references are the list of 10 materials that formed your MDL report -- those were 11 available before March 2018? Did you know that? 12 A. I am aware that some of them were available. 13 Would like to make the point that many of 14 the points that I make in my report can be supported 15 by many, many references. And so the fact that 16 I added new references, that's really not too 17 surprising. It's -- again, if I felt like wanted to 18 emphasize a point more strongly, including additional 19 references, I don't think that would be surprising to 20 add additional references. 21 Q. Did you change your standards or search terms 22 that you used in the Ingham literature review for the 23 MDL review? 24 MS. PARFITT: Objection to form. 25 THE WITNESS: When we talk about</p>	<p style="text-align: right;">Page 53</p> <p>1 Q. Do you consider yourself to be an expert in 2 cell studies and talc? 3 A. No, I do not. 4 Q. Okay. Do you consider yourself to be an 5 expert in cytotoxicity studies and talc? 6 A. No, I do not. 7 Q. Do you consider yourself to be an expert in 8 mutagenicity studies and talc? 9 A. No, I do not. 10 Q. Do you consider yourself to be an expert in 11 genotoxicity studies and talc? 12 A. No, I do not. 13 Q. Do you consider yourself to be an expert in 14 mineral testing methods? 15 A. No, I do not. 16 Q. Okay. Do you consider yourself an expert in 17 mineral characterization? 18 A. No, I do not. 19 Q. Do you consider yourself to be an expert in 20 cancer biology? 21 A. I am not a cancer biologist; however, I 22 consider cancer biology frequently in my work. 23 Q. Do you consider yourself to be an expert in 24 geology? 25 A. No, I do not.</p>



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<p>1 Q. And do you consider yourself to be an expert 2 in mining? 3 A. No, I do not. 4 Q. Do you have expertise in pathology? 5 A. I -- once again, I am not a pathologist. 6 Sometimes rely on pathology and have collaborated with 7 pathologists, but I am not an expert pathologist. 8 Q. And would you agree do that not have 9 expertise in pathology? 10 MS. PARFITT: Objection. Asked and 11 answered. 12 THE WITNESS: You asked that I -- I do 13 not have expertise in pathology. I stated that I am 14 not a pathologist, but I do know some pathology from 15 my work in ovarian cancer and other cancers over the 16 years. So to say that I have no expertise isn't -- 17 I don't think that is correct. But we both -- I 18 acknowledge that I am not a trained pathologist. 19 BY MR. JAMES: 20 Q. Do you recall being asked in Ingham if you 21 considered yourself to have expertise in pathology? 22 A. I don't recall that question, specifically. 23 Q. I'm going to hand you a copy of the 24 transcript from Ingham that I brought with me, and I'm 25 going to refer you --</p>	<p>1 BY MR. JAMES: 2 Q. Have you done anything between your March 3 deposition and today in regards to obtaining expertise 4 in pathology? 5 A. No, I have not. 6 Q. Dr. Moorman, that's all I have on the 7 transcript for right now. 8 Dr. Moorman, do you agree that, prior to 9 offering expert opinion on a particular topic, an 10 expert should be conducted to -- expected to conduct a 11 comprehensive review of the medical and scientific 12 literature on that topic? 13 A. I'm sorry, I'm reading the question. 14 I -- I think that it is important to be 15 comprehensive. I think it's also important to 16 recognize that there are expertise in different areas. 17 And so we recognize that my expertise is in 18 epidemiology, and I have supplemented that with 19 other -- information from other areas as well. 20 Q. And with respect to the epidemiology on talc 21 and ovarian cancer, do you believe you conducted a 22 comprehensive review of that body of literature? 23 A. I believe that I have. 24 Q. Do you believe you conducted a comprehensive 25 review of the literature and scientific evidence on</p>
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<p>1 MR. JAMES: And, Ms. Parfitt, I have 2 two copies, unfortunately, not three. And this will 3 be just a couple questions, Ms. Parfitt. So if you 4 bear with me -- 5 MS. PARFITT: You can just direct me to 6 the page. 7 MR. JAMES: Sure. Looking at page 280. 8 MS. PARFITT: Just bear with us both -- 9 me. All right. 10 MR. JAMES: I'm looking at lines 12 11 through 14. 12 MS. PARFITT: Thank you. 13 BY MR. JAMES: 14 Q. Do you see the question, Dr. Moorman, where 15 you were asked if you have expertise in pathology? 16 Do you see that question? 17 A. I do. 18 Q. Okay. And you answered that you do not; 19 correct? 20 MS. PARFITT: Objection. 21 THE WITNESS: Yes, that is how 22 I answered. I think that the more qualified answer 23 that I gave today is probably a more accurate 24 representation. 25</p>	<p>1 mechanism? 2 A. I considered the scientific mechanisms and, 3 again, recognizing what my expertise is. As I have 4 indicated earlier, I am not a cancer biologist. I'm 5 not a laboratory scientist. I consider some of that 6 data, but I recognize that I am not -- you know, that 7 is not my major area of expertise. 8 Q. And I do understand from your MDL report that 9 you considered biology; correct? 10 A. I did consider biology. 11 Q. And so my precise question is whether you 12 conducted a comprehensive review on the issue of 13 mechanism. 14 MS. PARFITT: Objection. Asked and 15 answered. 16 THE WITNESS: I considered it, and, 17 again, I think that there is information out there 18 that a cancer biologist would have the expertise to 19 review it in more detail because of their training, 20 which is different than the training and expertise 21 that I have. 22 MR. JAMES: I object to the 23 nonresponsive portion of the answer. 24 BY MR. JAMES: 25 Q. Dr. Moorman, did you conduct a comprehensive</p>

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<p>1 review of all of the literature on animal studies and 2 talc? 3 MS. PARFITT: Objection. Form. 4 THE WITNESS: I don't believe that -- I 5 cannot say that I considered -- identified or 6 considered every animal study. 7 MR. JAMES: Object to the nonresponsive 8 answer. 9 BY MR. JAMES: 10 Q. Did you conduct a comprehensive review of the 11 literature on animal studies and talc? 12 MS. PARFITT: Asked and answered. 13 Objection. 14 THE WITNESS: I -- I believe that 15 I answered your question. I said that I don't think 16 that I identified or considered every animal study 17 related to talc and ovarian cancer. 18 BY MR. JAMES: 19 Q. Did you conduct a comprehensive review of 20 cell studies and talc? 21 A. Once again, I considered some of that 22 literature. Whether it was comprehensive or not, I -- 23 I don't think that I have the expertise to say that 24 I considered all of the cell studies and talc. 25 Q. Did you conduct a comprehensive review on the</p>	<p>1 have referred to another article. 2 Q. Did you conduct a comprehensive review of the 3 genotoxicity studies that are relevant to talc and 4 ovarian cancer? 5 A. My answer to this question is similar to the 6 answers that I have given there. 7 I have read some of the mechanistic studies. 8 I would not say that I necessarily identified every 9 relevant genotoxicity study. 10 Q. And I'm not asking you, Dr. Moorman, if you 11 did find 100 percent of the studies. I'm asking you 12 if part of your review in this case began with the 13 intention to capture that body of literature. 14 MS. PARFITT: Objection. Asked and 15 answered several times. 16 THE WITNESS: My intent was, as an 17 epidemiologist, was to be very comprehensive in my 18 area of expertise. There were certainly some other 19 related areas where I reviewed the literature, but 20 there are experts that will speak to that more 21 directly because of their expertise. 22 BY MR. JAMES: 23 Q. Okay. So will you agree with me today that 24 you have not conducted a comprehensive review of the 25 cell studies and talc?</p>
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<p>1 issue of migration in this case? 2 A. I believe -- again, I considered every study 3 that I was aware of on migration of talc. It's a 4 little bit outside my area of expertise, so I am not 5 sure that I identified every single study in that 6 regard. 7 Q. And with the methods that you applied in this 8 case, was it your intention to capture every study 9 pertaining to the issue of migration? 10 MS. PARFITT: Objection. Form. 11 THE WITNESS: I tried -- you know, my 12 intent was to read the articles that I was aware of, 13 that were brought to my attention. Because it is a 14 little bit outside my area of expertise, I cannot say 15 with 100 percent certainty that I identified every 16 single study related to migration. 17 BY MR. JAMES: 18 Q. But you testified that your intent was to 19 read the articles that you are aware of or that were 20 brought to your attention. 21 When you say brought to your attention, was 22 that by Plaintiffs' counsel? 23 A. It's some -- some of them could have been 24 brought to my attention in that way. Some of them 25 could have been -- like, an article that I read might</p>	<p>1 MS. PARFITT: Objection. Misstates her 2 testimony. 3 You may answer, Dr. Moorman. 4 THE WITNESS: I -- I think that -- 5 I think that it is fair to say that I have probably 6 not reviewed every cell study and talc. 7 BY MR. JAMES: 8 Q. Okay. Dr. Moorman, I'm going to refer you 9 back to the Ingham transcript, please, that's in front 10 of you. 11 MS. PARFITT: Are we marking this, 12 Scott? 13 MR. JAMES: We can. Sure. 14 Dr. Moorman, when we finish this, I'll take 15 that back from you and mark it as Exhibit No. 11. 16 Okay? 17 (Exhibit No. 11 was marked for identification.) 18 BY MR. JAMES: 19 Q. Dr. Moorman, if you look at page 35 of your 20 transcript, please. And if you look at lines -- it's 21 lines 11 through 17. It's a question and answer. If 22 you could review that for me. 23 A. Okay. 24 Q. And do you see that on line 16, you answered 25 in Ingham:</p>

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<p style="text-align: right;">Page 62</p> <p>1 "I have not done a comprehensive 2 review of those studies." 3 And there, you're referring to cell studies; 4 correct? 5 A. Yes, that is what it says here. 6 Q. Is that a truthful answer? 7 A. I think -- 8 MS. PARFITT: Objection. Form. 9 Go ahead. 10 THE WITNESS: I think that we -- you 11 know, as you have asked me the questions and I have 12 responded to them, that it's -- I have looked at some 13 of these studies. I would not have looked at all of 14 them. 15 BY MR. JAMES: 16 Q. As an epidemiologist, do you understand the 17 significance of the term "comprehensive review"? 18 A. Yes, I understand the term. 19 Q. Okay. And you understand that you have 20 testified that you conducted a comprehensive review of 21 the epidemiology literature for talc and ovarian 22 cancer; correct? 23 MS. PARFITT: Asked and answered. 24 THE WITNESS: Yes. 25</p>	<p style="text-align: right;">Page 64</p> <p>1 literature in greater detail. 2 Q. Have you undertaken a comprehensive review of 3 literature pertaining to the allegation that asbestos 4 may contaminate talcum powder products? 5 MS. PARFITT: Objection. Form. 6 THE WITNESS: A comprehensive review of 7 the literature pertaining to the allegation that 8 asbestos may contaminate talcum powder? 9 I have read quite a few articles and 10 documents addressing that. Whether or not I have read 11 every document addressing that, I'm not absolutely 12 sure. 13 BY MR. JAMES: 14 Q. Okay. Dr. Moorman, you're answering a 15 question that I didn't ask. And so I object to the 16 nonresponsiveness again. 17 Did you conduct a comprehensive review of 18 the body of literature assessing whether asbestos 19 contaminates talcum powder products? 20 A. I believe that I have answered your question. 21 It's -- 22 Q. Could you please answer it again. 23 A. I have read many articles on it. I do not 24 know that I have read every article related to that 25 topic, again. So...</p>
<p style="text-align: right;">Page 63</p> <p>1 BY MR. JAMES: 2 Q. And so I'm asking if you have applied the 3 same comprehensive review to these other areas, 4 including cell studies, animal studies, and mechanism 5 studies. 6 MS. PARFITT: Objection. Form. Asked 7 and answered. 8 BY MR. JAMES: 9 Q. Have you conducted the same comprehensive 10 review on that body of literature that you've 11 conducted on the epidemiology? 12 MS. PARFITT: Objection. 13 THE WITNESS: Once again, I have 14 answered the question. This is not my primary area of 15 expertise. And so I have not done the review to the 16 depth and the -- as comprehensive as I have done in my 17 area of expertise, which is epidemiology. 18 BY MR. JAMES: 19 Q. Have you done a comprehensive review of the 20 epidemiology on the relationship between asbestos and 21 ovarian cancer? 22 A. I believe that I have looked at a pretty 23 comprehensive -- I've had a pretty comprehensive look 24 at the asbestos and ovarian cancer. I believe that 25 I have looked at the talcum -- talc and ovarian cancer</p>	<p style="text-align: right;">Page 65</p> <p>1 Q. You understand that if you were going to 2 publish an opinion in peer-reviewed literature about 3 the allegation that asbestos contaminates talcum 4 powder products, you would be expected to conduct a 5 comprehensive review of that literature; correct? 6 MS. PARFITT: Objection. Form. 7 THE WITNESS: If I were to publish an 8 opinion in a peer-reviewed literature, you would want 9 to have a comprehensive review of the literature, yes. 10 BY MR. JAMES: 11 Q. And have you conducted a comprehensive review 12 of the literature on that topic, such that you would 13 feel comfortable providing an opinion for a 14 peer-reviewed journal? 15 MS. PARFITT: Objection. Form. 16 BY MR. JAMES: 17 Q. And the topic being the allegation that 18 asbestos contaminates talcum powder products. 19 MS. PARFITT: Objection. Form. 20 THE WITNESS: I think that I'm maybe 21 having some difficulty answering this question because 22 it would seem like this would be a topic that would be 23 more appropriately addressed by a mineralogist. And 24 I -- I actually cannot see myself writing a 25 peer-reviewed article about this because it seems</p>

17 (Pages 62 to 65)

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<p style="text-align: right;">Page 66</p> <p>1 somewhat -- it's related to the epidemiology of talc 2 and ovarian cancer, but I would not be writing an 3 article focused solely on that. 4 BY MR. JAMES: 5 Q. You understand that, in your expert report, 6 you have opined with -- that there's "credible 7 evidence" there has been asbestos in talcum power 8 products. 9 Do you recall making that conclusion in your 10 report? 11 A. Yes. 12 Q. So to support that conclusion that you 13 believe there's "credible evidence" in talcum powder 14 products, did you conduct a systematic review of the 15 literature to support that conclusion? 16 A. I did not -- 17 MS. PARFITT: I'm going to object to 18 the form of the question. Some words were left out. 19 You may answer. 20 THE WITNESS: In my report, I cited 21 literature that did support that opinion. 22 Did I conduct a systematic review that 23 identified possibly every piece of literature that 24 addressed the topic? No, I did not do that. 25</p>	<p style="text-align: right;">Page 68</p> <p>1 A. It was part of the basis for my opinion, 2 along with some peer-reviewed literature. 3 Q. Okay. With respect to the company documents, 4 were those documents hand-selected for you by 5 Plaintiffs' counsel? 6 MS. PARFITT: Objection. Form. 7 THE WITNESS: They were provided to me 8 by Plaintiffs' counsel. 9 BY MR. JAMES: 10 Q. Okay. When you saw those documents, did you 11 ask if there were additional documents that would 12 address the issue of asbestos contamination? 13 A. I don't know that I asked if there were 14 additional documents. It was my impression that there 15 were probably many other documents related to this 16 that were not provided to me. 17 Q. And as a scientist, wouldn't you be 18 interested in knowing if there are other documents 19 that have been produced in this litigation that rebut 20 the claim that asbestos contaminates talcum powder 21 products? 22 MS. PARFITT: Objection. Form. 23 THE WITNESS: This is an interesting 24 question because the claim had been made that 25 asbestos -- or, rather, that talcum -- talcum powder</p>
<p style="text-align: right;">Page 67</p> <p>1 BY MR. JAMES: 2 Q. Do you believe that the standards for 3 providing opinions in litigation reports differ from 4 the standards for providing opinions in published 5 literature? 6 MS. PARFITT: Objection. Form. 7 THE WITNESS: No. No. I think that 8 one is trying to provide evidence to support one's 9 opinions. 10 BY MR. JAMES: 11 Q. With respect to the issue of asbestos 12 contamination, Dr. Moorman, you said you did review 13 some articles. 14 How did you characterize that? 15 A. I said that I reviewed some -- some articles 16 and some -- some documents. I don't think that 17 I reviewed every article or document that is available 18 on that topic. 19 Q. With respect to documents, are you referring 20 to company documents provided to you by Plaintiffs' 21 counsel? 22 A. That -- that's part of what I reviewed, some 23 of those documents provided by counsel. 24 Q. And looking at those documents provided the 25 basis for your opinion; is that right?</p>	<p style="text-align: right;">Page 69</p> <p>1 products had been asbestos-free since 1976. And it 2 is -- the documents provided, including the 3 peer-reviewed as well as the other, saying that -- 4 provide evidence that that is not an accurate 5 statement. 6 We're not saying that every container of 7 talcum powder contains asbestos, but what I was saying 8 in my report is that there is evidence that some 9 talcum powder products have asbestos in them. 10 MR. DONATH: Move to strike, 11 nonresponsive. 12 BY MR. JAMES: 13 Q. So are you changing your report -- because in 14 the report, you say that there is "credible evidence." 15 Do you recall making that conclusion? 16 A. Yes. 17 Q. As a scientist, you understand that to give 18 something credit, you would necessarily need to 19 consider both sides of the story; correct? 20 MS. PARFITT: Objection. Misstates her 21 testimony. She's... 22 You can answer, Dr. Moorman. 23 THE WITNESS: I'm sorry? 24 MS. PARFITT: I said it misstates what 25 you're trying to suggest to the ladies and gentlemen</p>

18 (Pages 66 to 69)

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Page 70	Page 72
<p>1 of the jury.</p> <p>2 But if you can answer that question again,</p> <p>3 please try and answer Mr. James' question. And</p> <p>4 look -- if you need to look at the question, please</p> <p>5 do.</p> <p>6 THE WITNESS: I think that I did -- it</p> <p>7 says "As a scientist, you understand that to give</p> <p>8 something credit, you would necessarily need to</p> <p>9 consider both sides of the story."</p> <p>10 And I think that I did consider both sides</p> <p>11 of the story.</p> <p>12 I think that, as I stated, the evidence does</p> <p>13 not suggest that every container of talcum powder has</p> <p>14 detectable asbestos in it. But my statement that</p> <p>15 there is credible evidence that some talcum powder</p> <p>16 products contain asbestos, I think that that statement</p> <p>17 is absolutely true. There is some evidence to</p> <p>18 indicate that some talcum powder -- or asbestos has</p> <p>19 been identified in some talcum powder products.</p> <p>20 BY MR. JAMES:</p> <p>21 Q. Do you understand what Johnson &amp; Johnson's</p> <p>22 position is with respect to that claim?</p> <p>23 A. I -- I don't know specifically. Perhaps you</p> <p>24 could -- could tell me.</p> <p>25 Q. You understand that Johnson &amp; Johnson's</p>	<p>1 company documents and other materials to support your</p> <p>2 conclusions about asbestos contamination?</p> <p>3 A. I -- I wouldn't be able to quantify that.</p> <p>4 I don't know specifically.</p> <p>5 Q. Can you give us an estimate?</p> <p>6 A. I think it would be pretty difficult to come</p> <p>7 up with an estimate. You know, I read some documents</p> <p>8 from the company. I read documents -- some</p> <p>9 peer-reviewed literature. I reviewed documents</p> <p>10 provided by Plaintiffs' counsel.</p> <p>11 Perhaps -- I don't know. Perhaps ten -- ten</p> <p>12 hours or so.</p> <p>13 Q. When you said that you reviewed company</p> <p>14 documents, again, those are the documents provided to</p> <p>15 you by Plaintiffs' counsel; correct?</p> <p>16 A. Yes.</p> <p>17 MS. PARFITT: Objection. Form.</p> <p>18 THE WITNESS: Yes, the Plaintiff</p> <p>19 provided those documents to me.</p> <p>20 BY MR. JAMES:</p> <p>21 Q. And you did not ask Plaintiffs' counsel to</p> <p>22 provide you additional documents once you saw the</p> <p>23 first batch of documents; correct?</p> <p>24 MS. PARFITT: Objection. Form.</p> <p>25 THE WITNESS: I did not ask, no.</p>
Page 71	Page 73
<p>1 position is that talcum powder products have not been</p> <p>2 contaminated with asbestos? Do you know that that's</p> <p>3 Johnson &amp; Johnson's position?</p> <p>4 A. I -- if you are telling me that now, I don't</p> <p>5 know that I have -- I -- I'm trying to think what</p> <p>6 I have read. I think that, yes, I have probably read</p> <p>7 statements from the company that describes that as</p> <p>8 their position.</p> <p>9 Q. And do you know what Johnson &amp; Johnson bases</p> <p>10 their position on?</p> <p>11 A. Not specifically.</p> <p>12 Q. Wouldn't that be pretty important to</p> <p>13 understand before making an opinion about whether</p> <p>14 there's credible evidence of asbestos contamination?</p> <p>15 MS. PARFITT: Objection. Form.</p> <p>16 THE WITNESS: Again, I think that when</p> <p>17 one is trying to make a statement that there is no</p> <p>18 asbestos contained in talc products, if you are</p> <p>19 finding evidence from multiple sources that there is</p> <p>20 asbestos contained in some talc products, that</p> <p>21 supports the statement that I made in report that</p> <p>22 there is credible evidence that not all talc products</p> <p>23 are asbestos-free.</p> <p>24 BY MR. JAMES:</p> <p>25 Q. How many hours did you spend reviewing</p>	<p>1 BY MR. JAMES:</p> <p>2 Q. You also looked at litigation reports from</p> <p>3 Plaintiffs' expert regarding asbestos contamination;</p> <p>4 correct?</p> <p>5 A. Yes, I did.</p> <p>6 Q. And you understand those experts are paid</p> <p>7 litigation experts by the Plaintiffs; correct?</p> <p>8 MS. PARFITT: Objection. Form.</p> <p>9 THE WITNESS: Yes, I understand that</p> <p>10 they are paid by the Plaintiffs.</p> <p>11 BY MR. JAMES:</p> <p>12 Q. One of those experts is Longo; correct?</p> <p>13 A. That is correct.</p> <p>14 MS. PARFITT: Is that Dr. Longo?</p> <p>15 MR. JAMES: Thank you, Michelle.</p> <p>16 BY MR. JAMES:</p> <p>17 Q. Dr. Longo; is that correct?</p> <p>18 A. That is correct.</p> <p>19 Q. Okay. So you reviewed Dr. Longo's reports?</p> <p>20 A. I looked at them, yes.</p> <p>21 Q. Okay. Do you understand that in this</p> <p>22 litigation, Johnson &amp; Johnson has presented experts to</p> <p>23 rebut Dr. Longo's findings?</p> <p>24 MS. PARFITT: Objection. Just let the</p> <p>25 record reflect that the defense expert reports have</p>



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<p style="text-align: right;">Page 74</p> <p>1 not yet been provided in this litigation, in the MDL</p> <p>2 litigation, so it would have been difficult to provide</p> <p>3 that to Dr. Moorman.</p> <p>4 BY MR. JAMES:</p> <p>5 Q. You can still answer the question.</p> <p>6 A. It would not surprise me to know that there</p> <p>7 were reports provided by -- that was done for the</p> <p>8 defense, but I have not seen them.</p> <p>9 Q. Did you ask to see them?</p> <p>10 MS. PARFITT: Objection. Form.</p> <p>11 THE WITNESS: I did not ask to see --</p> <p>12 no, I did not.</p> <p>13 BY MR. JAMES:</p> <p>14 Q. And counsel just made a note on the record</p> <p>15 about these litigation reports from the defense not</p> <p>16 being made available yet in the MDL.</p> <p>17 Do you understand that the defense has</p> <p>18 presented experts, for example, in the Ingham case to</p> <p>19 rebut Dr. Longo's findings?</p> <p>20 A. I was not specifically aware of that. It</p> <p>21 would not surprise me, however.</p> <p>22 Q. You understand Dr. Longo's litigation reports</p> <p>23 that you reviewed, those are not peer-reviewed.</p> <p>24 Do you understand that?</p> <p>25 MS. PARFITT: Objection. Form.</p>	<p style="text-align: right;">Page 76</p> <p>1 there's no safe level of asbestos, that any level of</p> <p>2 asbestos in a talcum powder product is bad for the</p> <p>3 health of the people who use it.</p> <p>4 Q. Do you intend to offer any opinions about the</p> <p>5 purported amount of contamination in talcum powder</p> <p>6 products over the course of history?</p> <p>7 MS. PARFITT: Objection. Form.</p> <p>8 THE WITNESS: I am not going to offer</p> <p>9 an opinion about the quantity of asbestos in talcum</p> <p>10 powder products.</p> <p>11 BY MR. JAMES:</p> <p>12 Q. Have you, in the course of forming your</p> <p>13 opinions in this case, ever reviewed the FDA testing</p> <p>14 of talcum powder products for the presence of</p> <p>15 asbestos?</p> <p>16 A. I recall reviewing a document from FDA, yes.</p> <p>17 Q. Okay. And that document is not discussed in</p> <p>18 your report, is it?</p> <p>19 A. No, I don't think that I specifically</p> <p>20 reference that.</p> <p>21 Q. Why is that?</p> <p>22 A. I don't -- I don't know why I didn't</p> <p>23 reference it. I read it, but...</p> <p>24 MR. JAMES: I'm marking Exhibit No. 11</p> <p>25 [sic], talc testing information from the FDA, that I'm</p>
<p style="text-align: right;">Page 75</p> <p>1 THE WITNESS: Yes, I know that they are</p> <p>2 not peer-reviewed.</p> <p>3 BY MR. JAMES:</p> <p>4 Q. With regard to the literature that you've</p> <p>5 referenced having reviewed pertaining to the</p> <p>6 allegation that talcum powder products are</p> <p>7 contaminated with asbestos, what does that literature</p> <p>8 say about Johnson &amp; Johnson products specifically?</p> <p>9 A. I'm trying to recall specifically. I believe</p> <p>10 that some of the articles were not specific about the</p> <p>11 particular brand names that they tested. I think they</p> <p>12 just described them as commercially available</p> <p>13 products. But I believe that -- I want to say that</p> <p>14 I recall at least one that described the products as</p> <p>15 being Johnson &amp; Johnson.</p> <p>16 Q. With respect to everything that you reviewed</p> <p>17 pertaining to your claim in your report of "credible</p> <p>18 evidence" of contamination of talcum powder products,</p> <p>19 what did everything you reviewed tell us about the</p> <p>20 amount of contamination in the products?</p> <p>21 Do you have any opinions about amount?</p> <p>22 A. I do. My opinions are that most of the</p> <p>23 analyses that detected asbestos fibers in talcum</p> <p>24 powder products detected low levels, and putting that</p> <p>25 in the context that asbestos has been characterized as</p>	<p style="text-align: right;">Page 77</p> <p>1 handing you, Dr. Moorman.</p> <p>2 (Exhibit No. 12 was marked for identification.)</p> <p>3 MR. JAMES: I provided an extra copy if</p> <p>4 you want to hand one to your counsel, please. Thank</p> <p>5 you much.</p> <p>6 MR. FARIES: This is 12.</p> <p>7 MS. PARFITT: 11 is the transcript.</p> <p>8 MR. JAMES: Got it. Thank you. I'll</p> <p>9 fix the sticker once we finish the question.</p> <p>10 MS. PARFITT: No worries.</p> <p>11 BY MR. JAMES:</p> <p>12 Q. Okay. Dr. Moorman, is this the document that</p> <p>13 you had seen before?</p> <p>14 A. I'm not sure if this is the same one or if</p> <p>15 I -- no, I -- actually, I think that I did see this.</p> <p>16 Q. And if you look over on page 2 of the</p> <p>17 exhibit -- it's page 2 of 8 -- do you see at the</p> <p>18 bottom, it says in the section "The results of FDA's</p> <p>19 survey" -- do you see where I'm reading?</p> <p>20 A. Yes.</p> <p>21 Q. And the FDA here says (as read):</p> <p>22 "The survey found no asbestos</p> <p>23 fibers or structures in any of the</p> <p>24 samples of cosmetic-grade raw</p> <p>25 material talc or cosmetic products</p>

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<p style="text-align: right;">Page 78</p> <p>1 containing talc." 2 Did I read that correctly? 3 A. You did. 4 MS. PARFITT: Are you going to complete 5 this paragraph, or are you going to leave it at that? 6 MR. JAMES: Michelle, you'll have an 7 opportunity to ask your questions. 8 MS. PARFITT: Well, just for 9 completeness. Certainly, if that's how you'd like to 10 handle it, that's fine. 11 MR. JAMES: Okay. That's how it works. 12 MS. PARFITT: Oh, I -- Scott, you don't 13 have to educate me on how it works. I get how you're 14 working, and we'll make it work on our side too. 15 Thank you. 16 BY MR. JAMES: 17 Q. Dr. Moorman, is that conclusion cited 18 anywhere in your report? 19 A. That -- 20 MS. PARFITT: Objection to the partial 21 conclusion. 22 Please answer. 23 THE WITNESS: Right. It's -- I did not 24 put it in there. However, I considered as I was, you 25 know, evaluating this literature, what it goes on to</p>	<p style="text-align: right;">Page 80</p> <p>1 proportion of the talcum powder products in the US are 2 Johnson &amp; Johnson products. 3 Q. Do you know if the FDA test results 4 specifically pertain to Johnson &amp; Johnson products? 5 A. I'm -- I believe that some of the products 6 tested -- I believe that some of them were Johnson &amp; 7 Johnson products, if I'm not mistaken. But I can't 8 say that with certainty. 9 Actually, when I look at the report, I do 10 see that they list Johnson's baby powder. 11 Q. And, Dr. Moorman, you're referring to page 7; 12 correct? 13 A. Yes. 14 Q. Okay. Do you understand that the FDA also 15 tested samples provided to them by the supplier of 16 talc for Johnson &amp; Johnson products? Did you know 17 that? 18 A. I -- I think that I knew that. I believe 19 I did know that. 20 Q. Again, that's not quoted anywhere in your 21 report either, is it? 22 A. No, that is -- 23 MS. PARFITT: Object to form. 24 THE WITNESS: -- not. 25</p>
<p style="text-align: right;">Page 79</p> <p>1 say (as read): 2 "The results were limited by the 3 fact that only four talc suppliers 4 submitted samples and by the 5 number of products tested." 6 BY MR. JAMES: 7 Q. Okay. 8 A. And so it goes on to say, you know, 9 (as read): 10 "They do not prove that most or 11 all talc or talc-containing 12 cosmetic products currently 13 marketed in the US are likely to 14 be free of asbestos 15 contamination." 16 So... 17 Q. You're offering opinions in the MDL -- let me 18 re-ask this. 19 Are you offering opinions in the MDL that 20 Johnson &amp; Johnson talcum powder products have been 21 contaminated with asbestos at some point in time? 22 A. In my opinion, I am referring to talcum 23 powder products. Okay? I don't believe in my report, 24 I ever specifically say Johnson &amp; Johnson talcum 25 powder products, but I do recognize that a large</p>	<p style="text-align: right;">Page 81</p> <p>1 BY MR. JAMES: 2 Q. Before offering opinions about "credible 3 evidence," don't you think it would be important to 4 mention the findings of the FDA on such an important 5 issue? 6 MS. PARFITT: Objection. Form. 7 THE WITNESS: As I have stated before, 8 my opinion was that there is credible evidence that -- 9 from peer-reviewed articles, from some other sources 10 as well, that asbestos has been found in talcum powder 11 products. I believe that that evidence is credible. 12 I did not make the statement that it is in 13 all products, but I think that my statement that there 14 is credible evidence that some talcum powder products 15 contain asbestos I think is accurate. 16 BY MR. JAMES: 17 Q. And is that a conclusion that you would feel 18 comfortable providing in published peer-reviewed 19 literature? 20 MS. PARFITT: Objection. Form. 21 THE WITNESS: To say that there is 22 credible evidence that some talcum powder products 23 contain asbestos, I think that that -- I would feel 24 comfortable saying that based on peer-reviewed 25 literature that has found that.</p>

21 (Pages 78 to 81)



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<p style="text-align: right;">Page 82</p> <p>1 BY MR. JAMES:</p> <p>2 Q. But you never undertook an effort to conduct</p> <p>3 a comprehensive review of the literature on the topic,</p> <p>4 did you?</p> <p>5 MS. PARFITT: Objection. Form. Asked</p> <p>6 and answered several times.</p> <p>7 THE WITNESS: Yes, I feel like I -- you</p> <p>8 have asked that, and I think that I have answered it.</p> <p>9 BY MR. JAMES:</p> <p>10 Q. What's your answer?</p> <p>11 A. My answer is that I have found evidence</p> <p>12 that -- from peer-reviewed literature, from other</p> <p>13 documents, that some asbestos has been detected in</p> <p>14 some talcum powder products.</p> <p>15 Q. With regard to the company documents that you</p> <p>16 reviewed that were provided to you by Plaintiffs'</p> <p>17 counsel, do you consider yourself an expert in</p> <p>18 reviewing the information conveyed by those documents?</p> <p>19 MS. PARFITT: Objection. Form.</p> <p>20 THE WITNESS: As I have indicated</p> <p>21 previously, I am not a mineralogist or a geologist,</p> <p>22 and so I would not consider myself an expert in</p> <p>23 reviewing those types of documents.</p> <p>24 BY MR. JAMES:</p> <p>25 Q. Do you have any knowledge about the</p>	<p style="text-align: right;">Page 84</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Dr. Moorman, have you seen a 2014 letter from</p> <p>3 the FDA addressing a request for a warning on talcum</p> <p>4 powder products?</p> <p>5 A. Yes, I have.</p> <p>6 Q. Do you know that within that letter, the FDA</p> <p>7 comments on the issue of alleged asbestos</p> <p>8 contamination?</p> <p>9 MS. PARFITT: Objection. Form.</p> <p>10 THE WITNESS: If I could see the</p> <p>11 document. It has been a while since I have actually</p> <p>12 looked at it.</p> <p>13 BY MR. JAMES:</p> <p>14 Q. Absolutely.</p> <p>15 MR. JAMES: And if counsel could remind</p> <p>16 me, are we now on 13?</p> <p>17 MS. PARFITT: We are indeed.</p> <p>18 MR. JAMES: Thank you.</p> <p>19 MS. PARFITT: You are very welcome.</p> <p>20 (Exhibit No. 13 was marked for identification.)</p> <p>21 BY MR. JAMES:</p> <p>22 Q. Okay. Dr. Moorman, I'm handing you a copy of</p> <p>23 the 2014 FDA letter with an extra copy to pass to your</p> <p>24 counsel.</p> <p>25 MS. PARFITT: Thank you.</p>
<p style="text-align: right;">Page 83</p> <p>1 specifications that are used by Johnson &amp; Johnson in</p> <p>2 manufacturing its talcum powder products?</p> <p>3 A. No, I do not.</p> <p>4 Q. Do you have any expertise in the sufficiency</p> <p>5 of the specifications to detect the presence of</p> <p>6 asbestos?</p> <p>7 A. No, I do not.</p> <p>8 Q. Did you know that Johnson &amp; Johnson produces</p> <p>9 its talcum powder products in accordance with</p> <p>10 specifications set out by the US Pharmacopeial</p> <p>11 Convention?</p> <p>12 MS. PARFITT: Objection. Form.</p> <p>13 THE WITNESS: I was not specifically</p> <p>14 aware of that. I don't know what their specifications</p> <p>15 are.</p> <p>16 BY MR. JAMES:</p> <p>17 Q. Did Plaintiffs' counsel provide to you those</p> <p>18 specifications?</p> <p>19 A. Not that I recall.</p> <p>20 Q. Did you know that the specifications provide</p> <p>21 mechanisms to test for the absence of asbestos?</p> <p>22 MS. PARFITT: Objection. Form.</p> <p>23 THE WITNESS: I have already stated</p> <p>24 that I -- I don't know what those specifications are.</p> <p>25</p>	<p style="text-align: right;">Page 85</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Dr. Moorman, if you could turn to the second</p> <p>3 page of the letter. Is this the letter that you've</p> <p>4 seen before, Dr. Moorman?</p> <p>5 A. Yes, it is.</p> <p>6 Q. And do you see that, in the section entitled</p> <p>7 "Chemistry Findings," there's a discussion there by</p> <p>8 the FDA pertaining to asbestos; correct?</p> <p>9 A. Yes, I see that.</p> <p>10 Q. And do you see that at the bottom of the</p> <p>11 letter, the very last sentence, the FDA says</p> <p>12 (as read):</p> <p>13 "You have not provided evidence</p> <p>14 that asbestos-contaminated</p> <p>15 talc-containing cosmetic products</p> <p>16 are currently being marketed,</p> <p>17 since the data submitted is almost</p> <p>18 40 years old."</p> <p>19 Do you see that?</p> <p>20 A. I do see that.</p> <p>21 Q. Okay. And you said that you have reviewed</p> <p>22 this letter in its entirety before?</p> <p>23 A. I have read it, yes.</p> <p>24 Q. Do you have any reason to quarrel with the</p> <p>25 scientists at the FDA that have looked at the issue of</p>

22 (Pages 82 to 85)

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<p style="text-align: right;">Page 86</p> <p>1 asbestos contamination in talcum powder products?</p> <p>2 MS. PARFITT: Objection. Form.</p> <p>3 THE WITNESS: I don't know who those</p> <p>4 scientists are. I don't know any scientists at the</p> <p>5 FDA who would have done -- would have done this. I --</p> <p>6 so I can't say that I have a quarrel with them because</p> <p>7 I don't know them.</p> <p>8 BY MR. JAMES:</p> <p>9 Q. Do you have any opinions about the type of</p> <p>10 asbestos that is alleged to contaminate talcum powder</p> <p>11 products?</p> <p>12 A. I am certainly aware that there are different</p> <p>13 types of asbestos. Again, from a health perspective,</p> <p>14 there is no safe form of asbestos. So if there are</p> <p>15 different types, it really doesn't make a lot of</p> <p>16 difference in terms of the potential health effects.</p> <p>17 MR. JAMES: Object to the nonresponsive</p> <p>18 portion.</p> <p>19 BY MR. JAMES:</p> <p>20 Q. Do you intend to offer any opinions about the</p> <p>21 type of asbestos that Plaintiffs contend contaminates</p> <p>22 talcum powder products?</p> <p>23 A. No, I am not going to specifically address</p> <p>24 the types of asbestos in talcum powder products.</p> <p>25 Q. Do you hold the opinion that asbestos causes</p>	<p style="text-align: right;">Page 88</p> <p>1 Did you form your opinions about asbestos</p> <p>2 and talcum powder that are contained within your MDL</p> <p>3 report after being retained as an expert?</p> <p>4 MS. PARFITT: Object to form.</p> <p>5 THE WITNESS: I -- it is often -- has</p> <p>6 often been reported in the literature that talcum</p> <p>7 powder contained asbestos prior to 1976, and that</p> <p>8 products produced after that did not contain asbestos.</p> <p>9 And as I became involved in this litigation,</p> <p>10 I was made aware of and discovered some of the</p> <p>11 articles that showed that talcum powder products after</p> <p>12 1976 contained asbestos.</p> <p>13 And so my opinion was that -- my opinion</p> <p>14 that asbestos in current or recently marketed talcum</p> <p>15 powder products could explain -- was part of the</p> <p>16 biological mechanism by which exposure to talcum</p> <p>17 powder, that was -- that was formed as I became aware</p> <p>18 of more of the available information, when I became</p> <p>19 involved in this litigation.</p> <p>20 BY MR. JAMES:</p> <p>21 Q. Setting aside the issue of asbestos in talcum</p> <p>22 powder, do you believe that asbestos is a cause of</p> <p>23 ovarian cancer?</p> <p>24 A. Yes, I do.</p> <p>25 Q. How many studies have explored the link</p>
<p style="text-align: right;">Page 87</p> <p>1 ovarian cancer?</p> <p>2 A. Yes.</p> <p>3 Q. Do you hold the opinion that exposure to</p> <p>4 asbestos through use of talcum powder products causes</p> <p>5 ovarian cancer?</p> <p>6 A. My opinion is based on exposure to talcum</p> <p>7 powder products and whatever is contained within them.</p> <p>8 And so if there is asbestos within talcum powder</p> <p>9 products, which we have some evidence to suggest that</p> <p>10 that is the case, then that provides a potential</p> <p>11 biological mechanism by which talcum powder products</p> <p>12 could cause ovarian cancer.</p> <p>13 Q. The opinion that you have pertaining to</p> <p>14 asbestos and ovarian cancer, did you form that opinion</p> <p>15 in the context of litigation?</p> <p>16 MS. PARFITT: Objection. Form.</p> <p>17 THE WITNESS: I'm not sure how -- could</p> <p>18 you perhaps restate the question?</p> <p>19 BY MR. JAMES:</p> <p>20 Q. Absolutely.</p> <p>21 A. I'm not sure --</p> <p>22 Q. Absolutely.</p> <p>23 A. -- what you're asking.</p> <p>24 Q. Did you form the opinion that -- did you</p> <p>25 form -- let me start over.</p>	<p style="text-align: right;">Page 89</p> <p>1 between asbestos and ovarian cancer?</p> <p>2 MS. PARFITT: Objection. Form.</p> <p>3 THE WITNESS: In terms of epidemiologic</p> <p>4 literature, there have been a couple of meta-analyses;</p> <p>5 and the exact number, I don't have that off the top of</p> <p>6 my head, but I want to say approximately a dozen</p> <p>7 studies.</p> <p>8 BY MR. JAMES:</p> <p>9 Q. Did you review the entire body of literature</p> <p>10 looking at a purported link between asbestos and</p> <p>11 ovarian cancer?</p> <p>12 MS. PARFITT: Objection. Form.</p> <p>13 THE WITNESS: I know that I looked at</p> <p>14 the meta-analyses. I looked at some data from IARC,</p> <p>15 and I believe that I have looked in some degree at,</p> <p>16 I think, all of the epidemiologic studies about</p> <p>17 asbestos and ovarian cancer.</p> <p>18 BY MR. JAMES:</p> <p>19 Q. So did you look at all of the studies that</p> <p>20 are discussed in the IARC monograph?</p> <p>21 MS. PARFITT: Objection. Form.</p> <p>22 THE WITNESS: I have -- the IARC</p> <p>23 monograph, as they typically do, they look at many of</p> <p>24 the animal studies, some of the laboratory studies.</p> <p>25 I have not looked at all of them. I have looked at</p>

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<p style="text-align: right;">Page 90</p> <p>1 the epidemiologic studies, which, again, is my area of 2 expertise. 3 BY MR. JAMES: 4 Q. And we're speaking currently about the IARC 5 monograph on asbestos; correct? 6 A. Correct. 7 Q. On page 34 of your report, if that you have 8 handy, Dr. Moorman -- actually, I think I have the 9 wrong page number. Give me one second. 10 Okay. It's actually page 35. My apologies. 11 And you see -- I'm looking at the first -- 12 the top paragraph. And you state in the second 13 sentence -- do you see where I am? It starts with 14 "IARC"? 15 A. Yes. 16 Q. Says (as read): 17 "IARC has stated that a causal 18 association between exposure to 19 asbestos and cancer of the ovary 20 was clearly established based on 21 strongly positive cohort mortality 22 studies of women with occupational 23 exposure to asbestos, as well as 24 studies of women with 25 environmental exposure to</p>	<p style="text-align: right;">Page 92</p> <p>1 Dr. Moorman. 2 A. Yes. 3 Q. Actually, 256 is where it carries into. And 4 on page 256, there's a section entitled "syntheses." 5 Do you see where I am, Dr. Moorman? 6 A. Yes. 7 Q. Okay. And if you look at the right-hand 8 column, it's the first full paragraph in the middle of 9 the page. 10 A. Yes. 11 Q. And there, the IARC states that (as read): 12 "The working group noted that a 13 causal association between 14 exposure to asbestos and cancer of 15 the ovary was clearly established 16 based on five strongly positive 17 cohort mortality studies of women 18 with heavy occupational exposure 19 to asbestos." 20 Do you see that? 21 A. Yes. 22 Q. Okay. And so the IARC then goes on to say, 23 in the next sentence, that the conclusion (as read): 24 "Received additional support from 25 studies showing that women and</p>
<p style="text-align: right;">Page 91</p> <p>1 asbestos." 2 A. Yes. 3 Q. Do you see where I was reading? 4 A. Yes. 5 Q. To be clear, Dr. Moorman, that's not 6 precisely how IARC has stated that, is it? 7 MS. PARFITT: Objection. Form. 8 THE WITNESS: I -- 9 BY MR. JAMES: 10 Q. I'm sorry, Doctor. 11 If I may, Dr. Moorman, I'll just provide you 12 a copy. Is that okay? 13 A. Okay. 14 Q. I'm going to mark as Exhibit 14 a copy of 15 the -- what we're referring to as the asbestos 16 monograph that's 100C. 17 (Exhibit No. 14 was marked for identification.) 18 MS. PARFITT: Mr. James, just for the 19 record, that's not the entire 100C monograph, is it? 20 MR. JAMES: Thank you. Thank you. Let 21 me clarify. This is excerpts of -- Exhibit 14 is 22 excerpts of the monograph. 23 MS. PARFITT: Thank you. 24 BY MR. JAMES: 25 Q. Okay. And if we turn to page 254,</p>	<p style="text-align: right;">Page 93</p> <p>1 girls with environmental, but not 2 occupational exposure to asbestos, 3 had positive, but nonsignificant, 4 increases in both ovarian cancer 5 incidence and mortality." 6 Do you see that? 7 A. Yes. 8 Q. And so the IARC's conclusion here with 9 respect to asbestos and ovarian cancer. 10 Again, this conclusion is being made outside 11 the context of talcum powders; correct? 12 A. Right. This is based on asbestos exposure. 13 Q. And the way that IARC has structured this 14 paragraph is that they have said that they've based 15 their conclusion on the occupational studies; correct? 16 MS. PARFITT: Objection. Form. 17 THE WITNESS: Yes. 18 BY MR. JAMES: 19 Q. And then they do note the additional support 20 after that sentence; correct? 21 MS. PARFITT: Objection to form. 22 THE WITNESS: Yes. 23 BY MR. JAMES: 24 Q. Okay. And just to be clear, the IARC here 25 acknowledges that the non-occupational studies report</p>

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<p style="text-align: right;">Page 94</p> <p>1 nonstatistically significant associations; correct?</p> <p>2 A. They note "positive, though nonsignificant</p> <p>3 increases."</p> <p>4 Yes, that's what it states.</p> <p>5 Q. And if you turn with me to page 280 of the</p> <p>6 same monograph, Dr. Moorman, with respect to talcum</p> <p>7 powder, specifically, on the right-hand column of</p> <p>8 page 280, it's the third full paragraph down, the IARC</p> <p>9 monograph states (as read):</p> <p>10 "The association between exposure</p> <p>11 to talc, potential or retrograde</p> <p>12 translocation to the ovarian</p> <p>13 epithelium, and the development of</p> <p>14 an ovarian cancer is</p> <p>15 controversial."</p> <p>16 Do you see where I was reading that?</p> <p>17 A. I do see that.</p> <p>18 Q. So in the same monograph where they're</p> <p>19 talking about asbestos and ovarian cancer in general,</p> <p>20 the IARC calls out the issue of talcum powder as a</p> <p>21 controversial association; correct?</p> <p>22 MS. PARFITT: Objection. Form.</p> <p>23 THE WITNESS: That's what it states,</p> <p>24 yes.</p> <p>25</p>	<p style="text-align: right;">Page 96</p> <p>1 A. Yes.</p> <p>2 Q. The IARC has not concluded that the presence</p> <p>3 of asbestos in talc powders renders such powders as</p> <p>4 carcinogenic, has it?</p> <p>5 MS. PARFITT: Objection. Form.</p> <p>6 THE WITNESS: I can't recall if they</p> <p>7 have made that conclusion or not.</p> <p>8 BY MR. JAMES:</p> <p>9 Q. You understand that when the IARC separately</p> <p>10 assessed talcum powders in the other monograph that</p> <p>11 we're talking about, they classified perineal talc use</p> <p>12 as a 2B do you know that?</p> <p>13 MS. PARFITT: And you're referring to</p> <p>14 the 2010 monograph?</p> <p>15 MR. JAMES: Yes, and I think that's</p> <p>16 what I said, and if I didn't, my apologies.</p> <p>17 THE WITNESS: Yes, to be a possible</p> <p>18 carcinogenic.</p> <p>19 BY MR. JAMES:</p> <p>20 Q. Okay. And by designating perineal talc use</p> <p>21 as a 2B, the IARC is not concluding that it is, in</p> <p>22 fact, a carcinogenic; correct?</p> <p>23 A. What they are concluding is that it is a</p> <p>24 possible carcinogen.</p> <p>25 Q. IARC has multiple classifications; correct?</p>
<p style="text-align: right;">Page 95</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Did you cite that conclusion in your report?</p> <p>3 MS. PARFITT: Objection. Form.</p> <p>4 THE WITNESS: I did not specifically</p> <p>5 cite this, because, you know, again, this was a</p> <p>6 conclusion made IARC 2010, and additional data has</p> <p>7 accumulated. And so I think that we're seeing that if</p> <p>8 they had -- you know, of course, I have no way of</p> <p>9 knowing what they would conclude, but I think that, in</p> <p>10 light of additional evidence that has arisen since the</p> <p>11 time that this report was written, a different</p> <p>12 conclusion could have been reached.</p> <p>13 MR. JAMES: Okay. And I object to the</p> <p>14 nonresponsive portion of that answer.</p> <p>15 BY MR. JAMES:</p> <p>16 Q. And for purposes of the record, Dr. Moorman,</p> <p>17 the monograph that we're looking at here together was</p> <p>18 published in 2012; correct?</p> <p>19 A. That is correct.</p> <p>20 Q. I think that you're probably thinking of the</p> <p>21 other monograph, which is the 2010 monograph; correct?</p> <p>22 When you said 2010?</p> <p>23 A. Well, I was looking at what was stated in</p> <p>24 that paragraph.</p> <p>25 Q. Fair enough. Fair enough.</p>	<p style="text-align: right;">Page 97</p> <p>1 A. That is correct.</p> <p>2 Q. If they characterize -- if they -- if they</p> <p>3 characterize something as a carcinogen, they label it</p> <p>4 as a Group 1; correct?</p> <p>5 A. That is correct.</p> <p>6 Q. If they characterize something as a probable</p> <p>7 carcinogen, they label it a 2A; correct?</p> <p>8 A. That is correct.</p> <p>9 Q. And if they characterize something as a</p> <p>10 possible, it's a 2B; correct?</p> <p>11 A. That is correct.</p> <p>12 Q. And the IARC has settled on 2B with talc --</p> <p>13 and with perineal talc use; correct?</p> <p>14 MS. PARFITT: Objection. Form.</p> <p>15 THE WITNESS: Once again, at the time</p> <p>16 of the report, that's what they decided on.</p> <p>17 BY MR. JAMES:</p> <p>18 Q. The opinions that you're offering in</p> <p>19 litigation in this MDL report are contrary to those</p> <p>20 reached by IARC; correct?</p> <p>21 MS. PARFITT: Objection. Form.</p> <p>22 THE WITNESS: No. I don't think that</p> <p>23 they are contrary. I think possible carcinogen --</p> <p>24 they are not saying it is not a carcinogen; they're</p> <p>25 saying a possible carcinogen.</p>

25 (Pages 94 to 97)

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<p style="text-align: right;">Page 98</p> <p>1 And I -- my report, with the additional 2 information that has been published since the time 3 that this report was done, I think that it strengthens 4 the conclusions. And that's why I felt comfortable 5 saying that it is a cause of ovarian cancer. 6 BY MR. JAMES: 7 Q. And so what you're saying is different than 8 what the IARC said in 2010; correct? 9 MS. PARFITT: Objection. Misstates her 10 testimony. Asked and answered. 11 THE WITNESS: I'm saying that there is 12 additional evidence that has arisen, and it 13 strengthens the -- it strengthens the evidence for the 14 association between talc and ovarian cancer. 15 BY MR. JAMES: 16 Q. And in 2010, IARC did not determine that 17 perineal talc use was carcinogenic; correct? 18 A. They said -- 19 MS. PARFITT: Objection. Misstates 20 testimony. 21 THE WITNESS: -- it was a possible 22 carcinogen. 23 MR. JAMES: I didn't misstate any 24 testimony. I didn't state anything about her 25 testimony. I asked a question.</p>	<p style="text-align: right;">Page 100</p> <p>1 MR. MIZGALA: There's a big difference. 2 MR. JAMES: Let's just move on. 3 MS. PARFITT: I didn't say 4 "peritoneal." That may be what the court reporter -- 5 And, Sophie, the record should reflect that 6 when we are saying -- for the most part, when someone 7 wants to say something, it's "perineal" -- 8 MR. JAMES: May we continue? 9 MS. PARFITT: I appreciate it. Thank 10 you. 11 I just want to help the court reporter out, 12 Scott. I'm sure you want a very clear record. 13 And, James, thank you very much for making 14 sure it is clear. 15 So, Sophie, thank you. When we say 16 "perineal," we mean "perineal." Not your fault at 17 all. 18 Thank you. 19 MR. JAMES: Are we good? 20 MS. PARFITT: We are so good. 21 BY MR. JAMES: 22 Q. In 2010, the IARC declared talc -- perineal 23 talc a 2B; correct? 24 A. That is correct. 25 Q. Okay. In 2010, the evidence that was before</p>
<p style="text-align: right;">Page 99</p> <p>1 MS. PARFITT: You actually 2 misrepresented her answer in your question. That was 3 my objection. You can go ahead. 4 MR. JAMES: If you'd like to read the 5 realtime, I didn't say anything about what she 6 testified to. I asked a question -- 7 MS. PARFITT: You said, "In 2010" -- 8 (Over-speaking.) 9 MR. JAMES: But if you want to continue 10 to do that all day -- 11 MS. PARFITT: -- "IARC did not 12 determine that peritoneal [sic] talc was carcinogenic; 13 correct?" 14 Just before that, she had said that it was 15 carcinogenic. 16 MR. JAMES: But I wasn't misstating her 17 testimony. 18 MS. PARFITT: Well, when you say that, 19 and she answered the question before that that's not 20 what IARC said, and then you say that is what IARC 21 says, you are misstating her testimony. 22 MR. MIZGALA: It's "perineal," not 23 "peritoneal." 24 MR. JAMES: Let's just move on. If you 25 continue to --</p>	<p style="text-align: right;">Page 101</p> <p>1 the IARC -- was the evidence at that time sufficient 2 for IARC to have said something more than 2B? 3 MS. PARFITT: Objection. Form. 4 THE WITNESS: I'm not quite sure. 5 BY MR. JAMES: 6 Q. You want me to rephrase? 7 A. Yes, if you wouldn't mind. 8 Q. You alluded to evidence that has -- and if 9 I'm misstating your testimony, Ms. Parfitt, please 10 object, because now I actually am talking about your 11 testimony. 12 A. Okay. 13 Q. But you alluded earlier that evidence has 14 developed since the 2010 monograph; correct? 15 A. Right. 16 Q. And so my question is, in your expert 17 assessment in 2010, when the IARC declared perineal 18 talc use to be a 2B, was the evidence at that snapshot 19 in time sufficient to support something more than 2B, 20 less than 2B, or did the IARC get it right? 21 MS. PARFITT: Objection. Form. 22 THE WITNESS: I -- I think that their 23 statement that it is a possible carcinogen -- I don't 24 know if you can -- you know, possible versus probable, 25 it's -- I don't know that there is any checklist to</p>



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<p style="text-align: right;">Page 102</p> <p>1 say this level of evidence would lead it to possible 2 versus probable. 3 And so to say whether or not they got it 4 right, I don't know how to answer that question. 5 I think that they certainly are indicating that there 6 was evidence indicating a problem, and now we have 7 more evidence that strengthens the -- I think there's 8 greater evidence that talc can cause ovarian cancer. 9 BY MR. JAMES: 10 Q. If someone had asked you to assess the body 11 of scientific and medical literature in 2010 on the 12 claim that talcum powder products cause ovarian 13 cancer, would you have opined in 2010 that the 14 evidence was sufficient to state that talcum powder 15 products generally cause ovarian cancer? 16 MS. PARFITT: Objection. Form. 17 THE WITNESS: I think that it is 18 impossible to say with certainty what -- at that point 19 in time what would I have opined? I think that, as we 20 are well aware, the body of literature has continued 21 to grow over time. I think that it has only 22 strengthened over time. At what point would I have 23 been able to opine that talc is a cause of ovarian 24 cancer? I can't pinpoint that exactly. 25</p>	<p style="text-align: right;">Page 104</p> <p>1 MS. PARFITT: Objection to form. 2 THE WITNESS: I -- when I look at some 3 of the studies, there are limitations, as there are 4 with -- I would say, with any study of humans and 5 cancer. 6 One of the things that comes to mind as a 7 possible limitation is that, in the occupational 8 studies, the cohorts are relatively small for looking 9 at cancer outcomes. So in many -- maybe the 10 majority -- of them, they had a few hundred people in 11 the cohort; and, when you looked at the expected 12 versus the observed number of cases, we're talking 13 about a handful of cases. 14 So it might be, you know, two or three 15 observed cases versus .6 expected or something like 16 that. 17 So that is a limitation of all of -- as 18 I recall, all of the occupational cohort studies that 19 the sample cites of the cohort. 20 BY MR. JAMES: 21 Q. Would you also acknowledge that another 22 limitation to that body of literature is the fact that 23 it's in the occupational context? 24 MS. PARFITT: Objection. Form. 25 THE WITNESS: I don't necessarily</p>
<p style="text-align: right;">Page 103</p> <p>1 BY MR. JAMES: 2 Q. And when you say in 2010 IARC declared talc a 3 2B, I think the phrasing that you used was that they 4 were saying that there was, quote, a problem. 5 Is that what you said? 6 A. I think that I said something to that effect. 7 Q. Okay. You understand that the IARC's 8 classification system does have a checklist of sorts 9 to determine if something is a 1, a 2A, or a 2B; 10 correct? Or a 3 and so on and so forth. 11 A. I am not familiar with the exact checklist. 12 Yes. 13 Q. Do you understand that, if IARC declares 14 something a 2B, it's concluding that chance, bias, and 15 confounding cannot be ruled out? Did you know that? 16 A. Again, off the top of my head, I cannot 17 recall exactly what are their -- you know, as you put 18 it, what is their checklist. 19 Q. Returning now back to the body of literature 20 on asbestos and ovarian cancer, you have testified 21 that you have reviewed that body of literature; 22 correct? 23 A. Yes. 24 Q. Do you recognize any limitations to that body 25 of literature?</p>	<p style="text-align: right;">Page 105</p> <p>1 consider that a limitation. That is where people had 2 exposure to this -- to asbestos in an occupational 3 setting. So if you want to look at the health effects 4 of that exposure, that's exactly where you would do 5 the study. 6 BY MR. JAMES: 7 Q. Do you agree that the body of literature in 8 the occupational context, which looks at exposure to 9 asbestos in the occupational setting, is different 10 than the allegation that exposure to contaminated 11 talcum powder products causes ovarian cancer? 12 A. The -- I agree that there is some difference 13 in the exposure, but it's part of the body of 14 literature. It's -- people exposed in this way, they 15 are at increased risk for ovarian cancer. So they may 16 have different levels of exposure, different routes of 17 exposure, but it's all part of the body of literature. 18 Q. You would agree that someone that's exposed 19 to asbestos-containing products in a factory 20 environment for a full workday is experiencing a 21 different level of exposure to someone who is using 22 allegedly contaminated asbestos talcum powder 23 products? 24 MS. PARFITT: Objection. Form. 25</p>

27 (Pages 102 to 105)

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<p style="text-align: right;">Page 106</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Let me rephrase that, because I jumbled that</p> <p>3 up.</p> <p>4 Would you agree that the level of exposure</p> <p>5 that someone would experience in the occupational</p> <p>6 setting to asbestos products is qualitatively</p> <p>7 different than what Plaintiffs are alleging in this</p> <p>8 case, which is exposure to talcum powder products that</p> <p>9 are allegedly contaminated with asbestos?</p> <p>10 A. I acknowledge that the exposures are</p> <p>11 different. It's how they are applied -- or, you know,</p> <p>12 the -- you know, we're talking about exposure to the</p> <p>13 genital area when we're talking about talcum powder</p> <p>14 products that may contain asbestos, where we would not</p> <p>15 expect to have genital exposure of asbestos in an</p> <p>16 occupational setting.</p> <p>17 So, yes, there are differences.</p> <p>18 Q. Do you acknowledge another limitation in the</p> <p>19 body of literature that IARC looked at to be</p> <p>20 misclassification?</p> <p>21 A. In epidemiology, we -- we recognize that</p> <p>22 there is likely to be misclassification in any</p> <p>23 epidemiologic study that you do. This is not a</p> <p>24 situation like with laboratory studies of animals</p> <p>25 where you can control every exposure, measure it very</p>	<p style="text-align: right;">Page 108</p> <p>1 meta-analysis before; correct?</p> <p>2 A. I have.</p> <p>3 Q. You don't have any discussion of the Reid</p> <p>4 paper in your report; correct?</p> <p>5 A. I don't -- I don't believe I do.</p> <p>6 Q. Do you understand that the Reid paper</p> <p>7 conflicts in part with the claim that asbestos is a</p> <p>8 cause of ovarian cancer?</p> <p>9 MS. PARFITT: Objection.</p> <p>10 THE WITNESS: I know what they -- what</p> <p>11 these authors concluded.</p> <p>12 BY MR. JAMES:</p> <p>13 Q. And if you look with me on page 1294,</p> <p>14 Dr. Moorman, in the "conclusions" section, you see at</p> <p>15 the bottom of that paragraph, with the sentence</p> <p>16 beginning with the word "however" -- it's sort of</p> <p>17 three-fourths of the way down -- the authors state</p> <p>18 (as read):</p> <p>19 "However, the authors of this</p> <p>20 article suggest that the IARC</p> <p>21 decision to determine asbestos</p> <p>22 exposure as a cause of ovarian</p> <p>23 cancer was premature and not</p> <p>24 wholly supported by the evidence."</p> <p>25 Do you see where I read that?</p>
<p style="text-align: right;">Page 107</p> <p>1 accurately.</p> <p>2 So some potential misclassification is</p> <p>3 possible, as it is in any epidemiologic study.</p> <p>4 Q. And the issue of misclassification has been</p> <p>5 specifically acknowledged in this body of literature;</p> <p>6 correct?</p> <p>7 MS. PARFITT: Objection to form.</p> <p>8 THE WITNESS: Can you be more specific</p> <p>9 about which misclassification you're referring to?</p> <p>10 BY MR. JAMES:</p> <p>11 Q. Sure. So what I'm referring to is</p> <p>12 misclassification of disease.</p> <p>13 Do you -- do you recall that, in this body</p> <p>14 of literature, there is discussion that, given the</p> <p>15 small number of cases which you described earlier,</p> <p>16 misclassification -- the potential for disease</p> <p>17 misclassification is a limitation to this body of</p> <p>18 literature?</p> <p>19 A. I am aware that that is an issue that has</p> <p>20 been discussed in this literature, yes.</p> <p>21 MR. JAMES: And I'm going to mark as</p> <p>22 Exhibit No. 15 the Reid paper.</p> <p>23 (Exhibit No. 15 was marked for identification.)</p> <p>24 BY MR. JAMES:</p> <p>25 Q. And, Dr. Moorman, you've seen this Reid</p>	<p style="text-align: right;">Page 109</p> <p>1 A. I do see that.</p> <p>2 Q. Okay. And so you acknowledge here that the</p> <p>3 authors of this paper have called into question the</p> <p>4 IARC decision; correct?</p> <p>5 MS. PARFITT: Objection. Form.</p> <p>6 THE WITNESS: I see what they have</p> <p>7 stated here, that --</p> <p>8 BY MR. JAMES:</p> <p>9 Q. And --</p> <p>10 A. -- that is their opinion, yes.</p> <p>11 Q. Excuse me, Doctor. My apologies.</p> <p>12 A. Yes.</p> <p>13 Q. And, again, this paper is assessing the</p> <p>14 IARC's conclusion about asbestos and ovarian cancer in</p> <p>15 general; correct?</p> <p>16 MS. PARFITT: Objection. Form.</p> <p>17 BY MR. JAMES:</p> <p>18 Q. It's not -- this article isn't pertaining to</p> <p>19 the issue of alleged asbestos contamination in talcum</p> <p>20 powder products, is it?</p> <p>21 A. Right. This is focused just on asbestos and</p> <p>22 ovarian cancer.</p> <p>23 Q. And if you look at the bottom of that -- the</p> <p>24 very last sentence in that paragraph, you see where</p> <p>25 the authors there discuss the potential problem of</p>



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<p style="text-align: right;">Page 110</p> <p>1 misclassification?</p> <p>2 A. I'm sorry, where are you?</p> <p>3 Q. It's the very last sentence, Doctor.</p> <p>4 A. Yes, I see what is written there.</p> <p>5 Q. So this article conflicts with your</p> <p>6 litigation opinion; correct?</p> <p>7 MS. PARFITT: Objection. Form.</p> <p>8 THE WITNESS: This reflects the opinion</p> <p>9 of these authors. There was another meta-analysis of</p> <p>10 asbestos and ovarian cancer that I believe was</p> <p>11 published in the same year. And as I recall, the</p> <p>12 conclusions of those authors, while acknowledging</p> <p>13 potential misclassification of disease, they felt like</p> <p>14 the evidence was adequate to rule that out as a</p> <p>15 possible source of bias that would explain the</p> <p>16 association that was observed.</p> <p>17 BY MR. JAMES:</p> <p>18 Q. And you're speaking of the Camargo article,</p> <p>19 I believe?</p> <p>20 A. Yes.</p> <p>21 Q. And have you separately assessed the issue of</p> <p>22 misclassification and whether, in your mind, that</p> <p>23 presents a significant enough problem to call into</p> <p>24 question the IARC conclusions?</p> <p>25 MS. PARFITT: Objection. Form.</p>	<p style="text-align: right;">Page 112</p> <p>1 Q. Did you review those articles?</p> <p>2 A. I did look at them, and as I recall, almost</p> <p>3 all of those -- the miners and -- almost all of the</p> <p>4 miners, and probably the millers, they were focusing</p> <p>5 primarily on males who were the people who were mostly</p> <p>6 involved in that type of work.</p> <p>7 Q. You would agree with me that if talcum</p> <p>8 powder, that is used in cosmetic talc products, is, in</p> <p>9 fact, contaminated with asbestos, then you would</p> <p>10 expect to see increased cancer incidence rates, for</p> <p>11 example, of mesothelioma, in cosmetic talc miners and</p> <p>12 millers; correct?</p> <p>13 MS. PARFITT: Objection. Form.</p> <p>14 THE WITNESS: I wouldn't be surprised</p> <p>15 to see that, yes.</p> <p>16 BY MR. JAMES:</p> <p>17 Q. And did you know that that body of literature</p> <p>18 reports no increased cancer incidence in talc miners</p> <p>19 and millers?</p> <p>20 A. It has been a while since I have looked at</p> <p>21 those papers, so I don't remember exactly what they</p> <p>22 reported.</p> <p>23 Q. And those papers are not discussed in your</p> <p>24 report; correct?</p> <p>25 A. Once again, I was focusing primarily on</p>
<p style="text-align: right;">Page 111</p> <p>1 THE WITNESS: Let me read your...</p> <p>2 I believe that I was convinced by the</p> <p>3 information presented in the Camargo article that</p> <p>4 I don't think that misclassification was enough of a</p> <p>5 problem to change the conclusion.</p> <p>6 BY MR. JAMES:</p> <p>7 Q. Are you familiar with -- did you undertake a</p> <p>8 Bradford Hill analysis of the literature on asbestos</p> <p>9 and ovarian cancer to reach the conclusion that</p> <p>10 asbestos is a cause of ovarian cancer?</p> <p>11 A. I didn't -- did not do the Bradford Hill</p> <p>12 analysis as I did with the talcum powder products and</p> <p>13 ovarian cancer. I felt like it was pretty well</p> <p>14 accepted.</p> <p>15 Q. Did you consider a body of literature</p> <p>16 commonly referred to as the "miners and millers</p> <p>17 studies"?</p> <p>18 A. Please -- I'm sorry. When you talk about the</p> <p>19 miners and millers studies, I'm not sure that I'm on</p> <p>20 the same page with you.</p> <p>21 Q. Are you familiar -- are you aware of the fact</p> <p>22 that there's a body of literature that has looked at</p> <p>23 cancer incidence rates in miners and millers of talc?</p> <p>24 A. Yes, I am aware of some of those articles.</p> <p>25 Yes.</p>	<p style="text-align: right;">Page 113</p> <p>1 ovarian cancer. And as many of these were on male</p> <p>2 subjects, I had looked at them, but they were of</p> <p>3 somewhat lesser importance to my review.</p> <p>4 Q. If --</p> <p>5 MS. PARFITT: I don't want to</p> <p>6 interrupt, and maybe a few follow-up questions. We're</p> <p>7 probably into about an hour and 20 minutes or so. But</p> <p>8 I don't want to interrupt your flow either.</p> <p>9 MR. JAMES: I can finish up in a few,</p> <p>10 or if you need a break now, we can take it now.</p> <p>11 THE WITNESS: Let's finish up in a few.</p> <p>12 MR. JAMES: And when I say "finish up,"</p> <p>13 I just mean this line. I apologize for that. That</p> <p>14 was misleading, I think.</p> <p>15 Sure. Give me a couple more, and then we'll</p> <p>16 take a break.</p> <p>17 THE WITNESS: Yeah, we can go a few</p> <p>18 more minutes.</p> <p>19 MS. PARFITT: Thank you, Scott.</p> <p>20 BY MR. JAMES:</p> <p>21 Q. If asbestos-contaminated talcum powder</p> <p>22 products have existed on the market for some period of</p> <p>23 time, wouldn't you expect to find higher incidence</p> <p>24 rates of other cancers of talcum powder users?</p> <p>25 MS. PARFITT: Objection. Form.</p>

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<p style="text-align: right;">Page 114</p> <p>1 THE WITNESS: It depends.</p> <p>2 BY MR. JAMES:</p> <p>3 Q. For example -- oh, I'm sorry. I thought you</p> <p>4 were done.</p> <p>5 A. I am done. Go ahead.</p> <p>6 Q. For example, if asbestos has contaminated</p> <p>7 talcum powder products for some period of time,</p> <p>8 wouldn't you expect to see higher rates of</p> <p>9 mesothelioma in users of cosmetic talcum powder</p> <p>10 products?</p> <p>11 A. You know, mesothelioma is an exceedingly rare</p> <p>12 cancer, and I don't know -- I don't know to what</p> <p>13 extent it has been -- talcum powder products --</p> <p>14 cosmetic talcum powder products has been examined as a</p> <p>15 risk factor for that.</p> <p>16 Q. Are you aware of any data showing that users</p> <p>17 of cosmetic talcum powder products are at greater risk</p> <p>18 of mesothelioma, asbestosis, or any other</p> <p>19 asbestos-related diseases?</p> <p>20 MS. PARFITT: Objection. Form.</p> <p>21 THE WITNESS: I can't think of that</p> <p>22 data right offhand, no.</p> <p>23 MR. JAMES: Okay. And how about now</p> <p>24 for a break?</p> <p>25 THE WITNESS: Okay.</p>	<p style="text-align: right;">Page 116</p> <p>1 MS. PARFITT: Objection. Form.</p> <p>2 THE WITNESS: I considered it as part</p> <p>3 of the constituents of the talcum powder products. My</p> <p>4 overall opinion is based on exposure to talcum powder</p> <p>5 products and whatever constituents are in there,</p> <p>6 including the fibrous talc.</p> <p>7 BY MR. JAMES:</p> <p>8 Q. Given that you have opined in your MDL report</p> <p>9 for the first time on fibrous talc and did not provide</p> <p>10 that opinion in the Ingham case, can you tell me what</p> <p>11 you're basing your opinion on with regard to the</p> <p>12 fibrous talc?</p> <p>13 MS. PARFITT: Objection.</p> <p>14 Hey, Scott, if I can ask -- I'm sorry, it</p> <p>15 isn't rolling. Is there some reason? I don't want to</p> <p>16 interrupt. We'll deal with it.</p> <p>17 THE COURT REPORTER: I can come over</p> <p>18 and do it, but we'll have to go off.</p> <p>19 MS. PARFITT: Sorry about that.</p> <p>20 THE VIDEOGRAPHER: Going off the record</p> <p>21 at 12:40 p.m.</p> <p>22 (Off the record.)</p> <p>23 THE VIDEOGRAPHER: Back on record at</p> <p>24 12:41 p.m.</p> <p>25</p>
<p style="text-align: right;">Page 115</p> <p>1 MS. PARFITT: Thank you.</p> <p>2 THE VIDEOGRAPHER: Going off record at</p> <p>3 11:45 a.m.</p> <p>4 (Recess taken from 11:45 a.m. to 12:39 p.m.)</p> <p>5 THE VIDEOGRAPHER: Back on record at</p> <p>6 12:39 p.m.</p> <p>7 BY MR. JAMES:</p> <p>8 Q. Dr. Moorman, you include in your MDL report</p> <p>9 references to "talc occurring in the fibrous habit."</p> <p>10 Do you recall referring to that in your</p> <p>11 report?</p> <p>12 A. Yes, I do.</p> <p>13 Q. That terminology is new to the MDL for you,</p> <p>14 isn't it?</p> <p>15 MS. PARFITT: Objection. Form.</p> <p>16 BY MR. JAMES:</p> <p>17 Q. I'll clarify.</p> <p>18 A. Please. Please do.</p> <p>19 Q. You did not -- in your Ingham testimony,</p> <p>20 where you provided your opinions in the Ingham case,</p> <p>21 you did not refer to "fibrous talc," did you?</p> <p>22 A. No, I don't believe I did.</p> <p>23 Q. So that -- sorry.</p> <p>24 So that's a new component of your opinion in</p> <p>25 the MDL?</p>	<p style="text-align: right;">Page 117</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Dr. Moorman, before the quick break -- I'll</p> <p>3 just restate the question.</p> <p>4 A. Okay.</p> <p>5 Q. So what do you base your opinions on with</p> <p>6 regard to fibrous talc?</p> <p>7 A. Okay. My opinion, I guess, is -- again, it's</p> <p>8 always been based on the constituents of the talcum</p> <p>9 powder products. And so maybe clarifying based on</p> <p>10 maybe further reading on the constituents of, like,</p> <p>11 asbestiform talc, that this again contributes to the</p> <p>12 biological plausibility of it, that this is another</p> <p>13 potential constituent of the talcum powder product</p> <p>14 that could contribute to ovarian cancer risk.</p> <p>15 Q. So one component of your opinion is that</p> <p>16 there is fibrous talc in talcum powder products;</p> <p>17 correct?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And given that that is a new opinion,</p> <p>20 I am attempting to source the bases for that opinion.</p> <p>21 Are the opinions that you have about the</p> <p>22 presence of fibrous talc in talcum powder products</p> <p>23 based upon the same materials that you rely on for</p> <p>24 your opinions about the presence of asbestos in talcum</p> <p>25 powder products?</p>

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<p>1 MS. PARFITT: Objection. Form. As far 2 as a new opinion. 3 THE WITNESS: I'm sorry, let me read 4 that. 5 So my opinions about the presence of fibrous 6 talc in talcum powder products is based on some of the 7 same materials that have done analyses of talcum 8 powder products, yeah. 9 BY MR. JAMES: 10 Q. Would that include the Longo -- Dr. Longo 11 litigation testing? 12 A. I believe that he did make some mention of 13 that in his report, yes. 14 Q. And other -- would that include other 15 litigation reports that you reviewed? 16 MS. PARFITT: Objection. Form. 17 THE WITNESS: I'm -- precisely where 18 the information came from, that there is fibrous talc 19 in talcum powder products, I -- I don't recall exactly 20 where -- where I gleaned that information. 21 BY MR. JAMES: 22 Q. And did you -- did you ask counsel if there 23 was any information provided by Johnson &amp; Johnson in 24 the talc litigation rebutting the claim that there's 25 fibrous talc present in the products?</p>	<p>1 BY MR. JAMES: 2 Q. Would you defer to others with regard to the 3 question of whether heavy metals are in the talcum 4 powder products? 5 A. I -- by deferring to others, okay, I clearly 6 do not do the analyses of those -- of those -- those 7 types of analyses myself, so I am relying on a report. 8 In this case, it was a report done by Dr. Crowley. 9 Q. Just to clarify, and Ms. Parfitt can correct 10 me if I'm wrong, but when you refer to Dr. Crowley's 11 report, are you referring to Dr. Crowley's report 12 about fragrances? 13 A. And I believe that it was not just 14 fragrances, but it was a number of substances that he 15 analyzed in that -- that he addressed in his analysis. 16 Q. Did you do any independent searching for 17 materials or scientific literature on the allegation 18 that heavy metals in cosmetic talc powders cause 19 ovarian cancer? 20 MS. PARFITT: Objection. 21 THE WITNESS: Okay. I'm reading your 22 question again. 23 No. I -- the -- what I looked at in regards 24 to heavy metals -- again, we have this report 25 indicating that these can be found in some talcum</p>
Page 119	Page 121
<p>1 MS. PARFITT: Objection. Form. 2 THE WITNESS: No, I did not 3 specifically ask them for that information. 4 BY MR. JAMES: 5 Q. Have you relied on any epidemiology 6 substantiating a claim that fibrous talc is 7 carcinogenic? 8 A. I am not aware of any epidemiologic 9 literature that specifically addressed that question. 10 Q. Turning to your opinions on heavy metals, 11 Dr. Moorman, you have opined in your report about 12 chromium, nickel, and cobalt; correct? 13 A. Yes, I have. 14 Q. Yet your opinions in the MDL report about the 15 alleged presence of chromium, nickel, and cobalt in 16 talcum powder products is new in the sense that you 17 did not express that opinion in the Ingham case; 18 correct? 19 MS. PARFITT: Objection. Misstates her 20 testimony -- our testimony. 21 THE WITNESS: I think the gist of my 22 opinions are based on talcum powder products and 23 whatever constituents are in there; so talc, asbestos, 24 any fragrances or other contaminants that may be in 25 there. So it's based on the product.</p>	<p>1 powder products, and then again we have data 2 indicating that these heavy metals can cause certain 3 types of cancer. 4 So it contributes to the biological 5 plausibility that there are substances in the talcum 6 powder products that could lead to cancer. 7 BY MR. JAMES: 8 Q. With regard to opinions about the presence of 9 heavy metals in talcum powder products, did you ask to 10 see any information or materials presented in the talc 11 litigation by Johnson &amp; Johnson as to that claim? 12 A. No, I did not. 13 Q. Did you do any separate analysis of the 14 talcum powder products to determine the presence of 15 heavy metals in these products? 16 A. I did not do any analyses of talcum powder 17 products. 18 Q. Do you have any knowledge concerning the 19 testing that is performed by Johnson &amp; Johnson and 20 third parties with respect to constituent elements in 21 the products? 22 A. No. This is outside my area of expertise. 23 Q. Do you have any information about allowable 24 levels of constituent elements in the talcum powder 25 products?</p>

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<p style="text-align: right;">Page 122</p> <p>1 A. No, I do not.</p> <p>2 Q. Do you have any basis to believe that if</p> <p>3 talcum powder products exceeded allowable levels for</p> <p>4 constituent elements, that those products went to</p> <p>5 market?</p> <p>6 MS. PARFITT: Objection. Form.</p> <p>7 THE WITNESS: No, I -- I don't have any</p> <p>8 information in that regard.</p> <p>9 BY MR. JAMES:</p> <p>10 Q. Okay. Turning to -- with -- to your opinion</p> <p>11 on -- strike that.</p> <p>12 Do you hold the independent opinion that</p> <p>13 cadmium, chromium, and cobalt cause ovarian cancer?</p> <p>14 MS. PARFITT: Objection. Form.</p> <p>15 THE WITNESS: I do -- I am not aware of</p> <p>16 papers that have directly addressed those metals in</p> <p>17 relation to ovarian cancer risk. I am basing it more</p> <p>18 on the conclusions from IARC that they do have</p> <p>19 carcinogenic potential.</p> <p>20 BY MR. JAMES:</p> <p>21 Q. And is the same true for nickel?</p> <p>22 A. Yes.</p> <p>23 Q. With regard to the alleged carcinogenicity of</p> <p>24 the constituent metal elements that you've identified</p> <p>25 in your report, did you consider anything other than</p>	<p style="text-align: right;">Page 124</p> <p>1 THE WITNESS: I -- I think that we do</p> <p>2 not have the data to specifically address that</p> <p>3 question specifically in regard to ovarian cancer.</p> <p>4 BY MR. JAMES:</p> <p>5 Q. With regard to the opinions you've expressed</p> <p>6 as to fragrances, is the sole basis of those opinions</p> <p>7 the value of work?</p> <p>8 A. That's the only document that I referred to.</p> <p>9 Q. And you understand --</p> <p>10 MR. JAMES: Ms. Parfitt, is it</p> <p>11 Dr. Crowley?</p> <p>12 MS. PARFITT: Dr. Crowley.</p> <p>13 BY MR. JAMES:</p> <p>14 Q. Okay. Do you understand that Dr. Crowley is</p> <p>15 a paid expert in this litigation for the Plaintiffs?</p> <p>16 A. I do understand that.</p> <p>17 Q. Do you know if Dr. Crowley conducted any sort</p> <p>18 of risk assessment with regard to his calculations?</p> <p>19 A. I do not know that.</p> <p>20 Q. If Johnson &amp; Johnson talcum powder products</p> <p>21 were not contaminated with asbestos, if you would</p> <p>22 accept that proposition from me, would you still hold</p> <p>23 the opinion that talcum powder products are a general</p> <p>24 cause of ovarian cancer?</p> <p>25 MS. PARFITT: Objection. Form.</p>
<p style="text-align: right;">Page 123</p> <p>1 the IARC monograph that you cited?</p> <p>2 A. No, I did not.</p> <p>3 Q. Did the IARC monograph that you cited include</p> <p>4 any assertion that the presence of these metals in</p> <p>5 talcum powders rendered those powders carcinogenic?</p> <p>6 A. I do not believe so.</p> <p>7 Q. Did the IARC 2010 monograph on talc include</p> <p>8 any assertion that the presence of heavy metals in</p> <p>9 those powders supports the 2B conclusion?</p> <p>10 MS. PARFITT: Objection. Form.</p> <p>11 THE WITNESS: I don't recall any</p> <p>12 mention of heavy metals in that monograph.</p> <p>13 BY MR. JAMES:</p> <p>14 Q. Returning back to fragrances, in your MDL</p> <p>15 report, you refer to a report by Crowley. Did I say</p> <p>16 that right?</p> <p>17 A. I've never met the man, so I don't know how</p> <p>18 it's pronounced, but yes, that's what I said.</p> <p>19 Q. And that's the report you identified for the</p> <p>20 basis of your fragrance opinions; correct?</p> <p>21 A. Yes.</p> <p>22 Q. Do you have -- do you hold the independent</p> <p>23 opinion that the fragrance ingredients in talcum</p> <p>24 powder products renders those products carcinogenic?</p> <p>25 MS. PARFITT: Objection.</p>	<p style="text-align: right;">Page 125</p> <p>1 You can answer.</p> <p>2 THE WITNESS: Okay. The opinion</p> <p>3 I formed is based primarily on the epidemiologic data;</p> <p>4 and the epidemiologic data is based on talcum powder</p> <p>5 products, whatever is contained in them. And in study</p> <p>6 after study, we see increased risk for ovarian cancer.</p> <p>7 So whatever is contained in the talcum powder products</p> <p>8 leads me to conclude that it can cause ovarian cancer.</p> <p>9 BY MR. JAMES:</p> <p>10 Q. And just to make sure that I understand your</p> <p>11 answer --</p> <p>12 A. Yes.</p> <p>13 Q. -- if the talcum powder products were not</p> <p>14 contaminated with asbestos, would you still reach the</p> <p>15 general cause opinion that you've offered in this</p> <p>16 case?</p> <p>17 MS. PARFITT: Objection. Form.</p> <p>18 THE WITNESS: I am -- I think that I've</p> <p>19 answered the question that it's based on talcum powder</p> <p>20 products, whatever is contained them -- in them. If</p> <p>21 it is shown that there is no asbestos, that doesn't</p> <p>22 change the fact that these dozens of epidemiologic</p> <p>23 studies have led to the conclusion of increased risk.</p> <p>24 BY MR. JAMES:</p> <p>25 Q. And does that same answer hold true if</p>

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<p style="text-align: right;">Page 126</p> <p>1 I asked you the same question with respect to heavy 2 metals, fibrous talc, and fragrance ingredients? 3 MS. PARFITT: Objection. Form. 4 THE WITNESS: Yes. I am basing my 5 opinion on the use of talcum powder products and 6 whatever are -- whatever their constituents are. 7 BY MR. JAMES: 8 Q. As a professional epidemiologist -- is that a 9 fair way to say it? 10 A. Yes. 11 Q. Okay. As a professional epidemiologist, part 12 of your day-in, day-out work is to look at literature 13 on purported associations and make conclusions about 14 the strengths or weaknesses of that literature; 15 correct? 16 A. Yes. 17 Q. And you have done that before you were 18 brought into the talc litigation on a variety of 19 different exposures or other things evaluated for 20 associations; correct? 21 A. That is correct. 22 Q. And setting aside the issue of talcum powder 23 products, have you ever before, in assessing other 24 exposures or other associations, relied upon company 25 documents to reach your conclusions?</p>	<p style="text-align: right;">Page 128</p> <p>1 BY MR. JAMES: 2 Q. On page 4 of your -- actually, it's page 5 of 3 your report, Dr. Moorman. You refer on the top of 4 that page, in the first full paragraph, to the 5 Schildkraut 2016 study; correct? 6 A. First paragraph? Yes, that is correct. 7 Q. And you say in that paragraph -- and if 8 you're looking at the same paragraph as I am -- you 9 say there that (as read): 10 "This was the first study of talc 11 use and ovarian cancer focused 12 exclusively on African-American 13 women." 14 Correct? 15 A. Yes, I do. 16 Q. And to be clear, Dr. Moorman, that study did 17 not look exclusively at talc use, did it? 18 A. No. The purpose of the African American 19 cancer epidemiology study was to look at the 20 epidemiology of ovarian cancer in African American 21 broadly. So we've looked at a number of exposures. 22 Q. And specific to the issue of powder, the 23 Schildkraut 2016 study -- and I guess is the 24 underlying study, the AACES -- looks at body powder, 25 not talc per se; correct?</p>
<p style="text-align: right;">Page 127</p> <p>1 A. I -- I'm trying to think. 2 We have -- my colleagues and I have 3 published systematic reviews of oral contraceptive use 4 and ovarian cancer and other cancer risk. And as part 5 of that procedure -- this was through the Agency on 6 Healthcare Research and Quality, or AHRQ -- and as 7 part of that procedure trying to ensure that we have 8 all relevant documents, I believe that there was an 9 effort to see if there were any company document 10 studies that would be relevant to that systematic 11 review. 12 Q. What about any internal company testing 13 documents? Have you ever looked at any internal 14 company testing documents in assessing any association 15 that you've considered throughout your career? 16 A. No -- 17 MS. PARFITT: Objection. 18 THE WITNESS: -- I did not. 19 BY MR. JAMES: 20 Q. Have you ever considered any paid litigation 21 expert reports in assessing any other association that 22 you've looked at through your career? 23 MS. PARFITT: Objection. Form. 24 THE WITNESS: I -- I can't think of 25 another instance where I have done that.</p>	<p style="text-align: right;">Page 129</p> <p>1 A. That was how the question was asked in the 2 questionnaire, yes. 3 Q. Okay. And so the statements in your report 4 that state that the study looked at talc powder should 5 be clarified; correct? 6 MS. PARFITT: Objection. Form. 7 THE WITNESS: I think to be absolutely 8 precise, we should have -- I should have said body 9 powder. But based on other literature, most body 10 powder use is talcum powder product use. So I agree, 11 I could have been more precise in my language there. 12 BY MR. JAMES: 13 Q. And you understand body powders are made up 14 of a variety of constituents; correct? 15 A. Yes. 16 Q. There are baby powders that are made of 17 things other than talc; correct? 18 A. I believe so, that there are cornstarch 19 powders as well. 20 Q. And there are deodorizing powders that are 21 made of things other than talc; correct? 22 A. I believe so, yes. 23 Q. And you know cornstarch, if there's a baby 24 powder made of cornstarch, that product does not 25 contain talc; correct?</p>

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<p style="text-align: right;">Page 130</p> <p>1 A. Yes.</p> <p>2 Q. Or -- I should clarify.</p> <p>3 If the version of the baby powder one is</p> <p>4 purchasing is labeled as a cornstarch product, it's</p> <p>5 cornstarch, not talc; correct?</p> <p>6 A. That is correct.</p> <p>7 Q. So the study participants in this study are</p> <p>8 not limited to talc users; correct?</p> <p>9 A. That is correct.</p> <p>10 Q. You also say in the report, in conjunction</p> <p>11 with these statements, that the study found a high</p> <p>12 prevalence of talc use; correct?</p> <p>13 A. Yes.</p> <p>14 Q. And we're looking at the same paragraph,</p> <p>15 Dr. Moorman. And, again, to be clear, the study</p> <p>16 didn't find that. The study, instead, found a high</p> <p>17 prevalence of powder use; correct?</p> <p>18 MS. PARFITT: Objection.</p> <p>19 THE WITNESS: Again, once I -- as I</p> <p>20 acknowledged earlier, I could have been more precise</p> <p>21 in the language, that it's -- I think that it -- based</p> <p>22 on our knowledge of the sales and other studies that</p> <p>23 have specifically reported on the types of powder use,</p> <p>24 the majority of the powder use would have been talc.</p> <p>25</p>	<p style="text-align: right;">Page 132</p> <p>1 anywhere else in your report, that for any genital use</p> <p>2 of body powder with an interview date before 2014, the</p> <p>3 results were not statistically significant; correct?</p> <p>4 MS. PARFITT: Objection.</p> <p>5 THE WITNESS: If you would give me just</p> <p>6 a moment to look through the report, I'd like to</p> <p>7 verify how I addressed that.</p> <p>8 I -- on page 23, I acknowledged that there</p> <p>9 was an attenuation of the odds ratio when comparing</p> <p>10 the women who were interviewed in the later time frame</p> <p>11 than in the earlier time frame.</p> <p>12 BY MR. JAMES:</p> <p>13 Q. Okay. And I'm looking at where you're</p> <p>14 looking, I believe, and it's the middle paragraph on</p> <p>15 page 23; correct?</p> <p>16 A. That is correct.</p> <p>17 Q. And there you say (as read):</p> <p>18 "The fact that the association was</p> <p>19 attenuated but not eliminated when</p> <p>20 considering the full study</p> <p>21 population suggested that the</p> <p>22 association was not due entirely</p> <p>23 to recall bias."</p> <p>24 Did I read that correctly?</p> <p>25 A. That is correct.</p>
<p style="text-align: right;">Page 131</p> <p>1 BY MR. JAMES:</p> <p>2 Q. You're not offering opinions on the MDL</p> <p>3 litigation about cornstarch, are you?</p> <p>4 A. No, I am not.</p> <p>5 Q. And you understand that the body of</p> <p>6 epidemiological literature that has developed over the</p> <p>7 last several decades has included findings looking at</p> <p>8 talc powders versus cornstarch powders versus non-talc</p> <p>9 powders; correct?</p> <p>10 A. Some studies, yes, have looked at the</p> <p>11 different powders.</p> <p>12 Q. And your -- the Schildkraut 2016 study didn't</p> <p>13 undertake the effort to make that distinction, did it?</p> <p>14 MS. PARFITT: Objection.</p> <p>15 THE WITNESS: I've already acknowledged</p> <p>16 that the question in the questionnaire just asked</p> <p>17 about body powder use.</p> <p>18 BY MR. JAMES:</p> <p>19 Q. You state that this study found a</p> <p>20 statistically significant increase for risk among talc</p> <p>21 users; right?</p> <p>22 A. Yes. We're in the same paragraph. Right?</p> <p>23 Q. Yes, Doctor. Thank you.</p> <p>24 A. Yes.</p> <p>25 Q. But you did not know in this paragraph, or</p>	<p style="text-align: right;">Page 133</p> <p>1 Q. Okay. And, again, here you do not report --</p> <p>2 let me start over.</p> <p>3 The association for talc users before 2014</p> <p>4 date was not statistically significant; correct?</p> <p>5 MS. PARFITT: Objection. Form.</p> <p>6 THE WITNESS: Yes. The -- the odds</p> <p>7 ratio was elevated but not statistically significant.</p> <p>8 BY MR. JAMES:</p> <p>9 Q. And you don't call that out in your report,</p> <p>10 do you?</p> <p>11 MS. PARFITT: Objection. Form.</p> <p>12 THE WITNESS: No. It's as it's</p> <p>13 written.</p> <p>14 BY MR. JAMES:</p> <p>15 Q. And as it's written, it says, "The</p> <p>16 association was attenuated but not eliminated."</p> <p>17 That's the wording you used; correct?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. But if the association is not</p> <p>20 statistically significant, would you still refer to</p> <p>21 that association as attenuated and not eliminated? Is</p> <p>22 that the proper way to refer to it?</p> <p>23 A. If the association was eliminated, if there</p> <p>24 was no association, we would have had an odds ratio of</p> <p>25 1. We have an odds ratio of 1.19.</p>

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<p style="text-align: right;">Page 134</p> <p>1 It is -- I acknowledge that it was not 2 statistically significant, but it was not eliminated. 3 It was attenuated. I think that my statement in my 4 report is accurate. 5 Q. So for any epidemiologic study that has an 6 odds ratio that crosses 1 but is reported to be above 7 1 with the odds ratio crossing 1 -- do you understand 8 what I'm asking? -- would you refer to that as an 9 association, an null association, a not statistically 10 significant association? What terminology would you 11 use? 12 A. I would refer to it as a non-statistically 13 significant association. If the data show 19 percent 14 increased risk, it's not statistically significant. 15 Q. And by saying that, what you're saying is 16 that the odds ratio that -- could fall with any -- 17 within the range identified; correct? 18 MS. PARFITT: Objection. Form. 19 THE WITNESS: The -- when you report a 20 95 percent confidence interval, it gives a range of 21 values which is statistically compatible with what you 22 found. Like, if the study were repeated again with 23 other samples, you might find an odds ratio that was a 24 bit higher or a bit lower. 25 But I think that it's very important to make</p>	<p style="text-align: right;">Page 136</p> <p>1 with respect to talc? 2 A. If you -- I know you have it right in front 3 of you. So if I could see it, so I could report it 4 accurately. I think I know what I found, but that was 5 paper that was done ten years ago. 6 MR. JAMES: Okay. And, Dr. Moorman, 7 I'm marking as Exhibit 16 a paper entitled "Ovarian 8 Cancer Risk Factors in African-American and White 9 Women." 10 I'm handing you two copies to pass along. 11 (Exhibit No. 16 was marked for identification.) 12 THE WITNESS: Okay. So we reported on 13 talc use for white women and for African-American 14 women. Neither association was statistically 15 significant, again, particularly for the African 16 American, which can be a reflection of the relatively 17 small sample size for African-American women. It was 18 an odds ratio of 1.19; in the white women, it was 19 1.04. 20 BY MR. JAMES: 21 Q. And those two associations reported in your 22 paper in 2009 are not reported in your report, are 23 they? 24 A. I did not -- I do not believe that I reported 25 those specific odds ratios. Data from the</p>
<p style="text-align: right;">Page 135</p> <p>1 the distinction between no association and no 2 statistically significant association. 3 BY MR. JAMES: 4 Q. But you didn't make that distinction in your 5 report? 6 MS. PARFITT: Objection. 7 THE WITNESS: You've asked the 8 question, and I've acknowledged that I did not address 9 statistical significance in that sentence. 10 BY MR. JAMES: 11 Q. On the same page of your report, if we go 12 back to page 5, you refer to a 2009 paper entitled 13 "Ovarian Cancer Risk Factors in African-American and 14 White Women"; correct? 15 A. Let me get to page 5. Which paragraph are 16 you -- 17 Q. So it's the second paragraph. In fact, you 18 refer to it here as the North Carolina Ovarian Cancer 19 Study; correct? 20 A. Right. Right. Okay. Yes. 21 Q. My apologies. I -- with -- in conjunction 22 that study, you published a paper in 2009; correct? 23 A. Right. Talc was not the primary focus of it, 24 but it was one of the risk factors that we looked at. 25 Q. And do you recall the results of that study</p>	<p style="text-align: right;">Page 137</p> <p>1 North Carolina ovarian cancer study was included in 2 the meta-analyses that I did describe. 3 Q. And with respect to odds ratio of 1.04 for 4 white women -- do you see that? Are we looking at the 5 same table together? Table 2? 6 A. Yes. 7 Q. Okay. And the 1.04 association there is very 8 close to the null; correct? 9 MS. PARFITT: Objection. Form. 10 THE WITNESS: Yes, it's close to 1. 11 BY MR. JAMES: 12 Q. And it has the odds ratio that crosses 1; 13 correct? The odds ratio range? Is that a fair way to 14 say it? 15 A. No. 16 Q. Okay. Tell me how to say it. 17 A. The 95 percent confidence interval -- 18 Q. That's right. 19 A. -- does cross 1. 20 Q. So we have the 1.04 with the CI crossing 1; 21 correct? 22 A. Yes. 23 Q. Would you refer to the 1.04 as an association 24 that is attenuated but not eliminated? 25 A. Well, first of all, I would not refer to it</p>

35 (Pages 134 to 137)



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<p style="text-align: right;">Page 138</p> <p>1 as attenuated because that implies that there's a  2 comparison with something else; and in the other  3 paper, it was comparing the full study population to a  4 subset. So I would never refer to this as attenuated.  5 This is what was shown in this particular  6 study. It's an odds ratio of 1.04. It's very close  7 to 1.  8 Q. Fair enough. And fair point about  9 attenuated.  10 Would you refer to a 1.04 with a CI that  11 crosses 1 as a positive association, as professional  12 epidemiologist?  13 A. When I would look at that, I would say that  14 there's little evidence of an association, very close  15 to 1, in this study population -- in this study.  16 Q. You've also published another study coming  17 out of the North Carolina Ovarian Cancer Study;  18 correct?  19 A. I have published quite a few papers that came  20 out of the North Carolina Ovarian Cancer Study.  21 Q. And do you recall publishing a paper in 2010  22 entitled "Primary peritoneal and ovarian cancers: An  23 epidemiologic comparative analysis"?  24 A. I was a coauthor on that paper, yes.  25 Q. Okay. And is this paper discussed in your</p>	<p style="text-align: right;">Page 140</p> <p>1 A. Yes, that's what's reported there based on a  2 quite small sample size.  3 Q. And, again, both of these associations are  4 not statistically significant; correct?  5 A. That is correct.  6 Q. And also I see over here to the left, the  7 category listed here is labeled "Talc use"; correct?  8 A. Yes.  9 Q. So this paper looks specifically at talcum  10 powders; is that right?  11 A. I -- I believe that, in that questionnaire,  12 it was specifically asking about talc use.  13 Q. And, again, the results of this study are not  14 reported in your report; correct?  15 A. As I said before when you asked that, the  16 data from the North Carolina Ovarian Cancer are  17 included in the Terry paper that combined data from  18 multiple studies.  19 Q. On page 11 of your report, Dr. Moorman, you  20 state, in the -- I guess it's the second paragraph  21 down from the top, starting with the "it is important"  22 language.  23 A. Mm-hmm.  24 Q. Okay. And if you look down to the second  25 sentence, you note there that (as read):</p>
<p style="text-align: right;">Page 139</p> <p>1 expert report at all?  2 A. I don't think that I specifically addressed  3 it. Again, the data from the North Carolina Ovarian  4 Cancer Study was included in the Terry analysis --  5 MR. JAMES: And I've marked the study  6 that I just referenced as Exhibit No. 17. I'm going  7 to hand you two copies.  8 (Exhibit No. 17 was marked for identification.)  9 BY MR. JAMES:  10 Q. And, Dr. Moorman, if we turn to page 995,  11 there is a Table 2 continued onto page. And if you  12 look down, this paper does report odds ratios for talc  13 use; correct?  14 A. Yes, it does.  15 Q. And for -- if you look over to the right, all  16 the way to the right, you see that you've reported a  17 1.15 not statistically significant association for  18 serous invasive ovarian cancer; correct?  19 A. That's correct.  20 Q. And that's with a CI that crosses 1; correct?  21 A. That is correct.  22 Q. And if you look to the left of that, you've  23 reported here a .76 odds ratio for the relationship  24 between talc use and primary peritoneal cancer;  25 correct?</p>	<p style="text-align: right;">Page 141</p> <p>1 "It is not unusual for scientists  2 and epidemiologists to weigh the  3 Hill factors differently in  4 reaching the conclusion."  5 Correct?  6 A. Yes, I state that.  7 Q. And then in the next sentence, you go on to  8 provide examples of that; correct?  9 A. Correct.  10 Q. And you note there (as read):  11 "The evidence that cigarette  12 smoking causes lung cancer or  13 asbestos causes lung disease."  14 Right?  15 A. Yes.  16 Q. And those are the examples that you're  17 providing to support the prior sentence that  18 epidemiologists can sometimes weigh things  19 differently; is that right?  20 A. I give that as an example, yes.  21 Q. For the two examples that you've provided  22 there, has the medical and scientific community  23 accepted that smoking causes lung cancer and that  24 asbestos causes lung disease?  25 A. I think that, yes, that is true. Now, the</p>

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<p style="text-align: right;">Page 142</p> <p>1 point that I am making here is that some scientists,  2 especially in the early years when the data were  3 accumulating related to smoking and lung cancer, some  4 people weighted the evidence differently.  5 For example, some of the studies looked at  6 whether people reported whether or not they inhaled or  7 not, and some funny results were observed there. And  8 some scientists thought that was really important  9 evidence against an association, whereas others  10 thought it was -- it was not to be regarded very  11 seriously.  12 Q. Do you regard the body of evidence on smoking  13 and asbestos to be equivalent to the body of evidence  14 on talc and ovarian cancer with regard to evaluating  15 cause?  16 MS. PARFITT: Objection.  17 THE WITNESS: Could you clarify what  18 you mean by "equivalent"?  19 BY MR. JAMES:  20 Q. Sure. By providing these two examples  21 here -- first, the smoking example, and second, the  22 asbestos example -- are you suggesting that the body  23 of evidence to support the causal conclusion with  24 respect to asbestos and smoking is qualitatively  25 and/or quantitatively the same or similar to the body</p>	<p style="text-align: right;">Page 144</p> <p>1 that the criteria that I applied to come to a  2 conclusion of causality are based on strong data.  3 MR. JAMES: Object to the nonresponsive  4 answer.  5 THE WITNESS: Maybe you can clarify  6 your question, because I'm -- maybe I didn't  7 understand what you were asking.  8 BY MR. JAMES:  9 Q. Sure. Dr. Moorman, you provided these  10 examples in your report; correct?  11 A. These are examples to make the point that, as  12 we have said here, that some people weigh different  13 parts of the evidence a bit differently.  14 Q. And so if someone who's reading your report  15 gets an impression that you are equating the body of  16 scientific and medical evidence on the issue of  17 smoking and lung cancer to the body of scientific  18 evidence on talc and ovarian cancer, then they would  19 be getting the wrong impression; is that correct?  20 MS. PARFITT: Objection.  21 THE WITNESS: I don't think that I am  22 equating the evidence for the two. I am -- equating  23 the evidence for the two types of cancer. I was using  24 that to illustrate -- to support the sentence right  25 before that, is that, when we look at these Hill</p>
<p style="text-align: right;">Page 143</p> <p>1 of evidence we have in 2019 as to talc and ovarian  2 cancer?  3 A. To say that it is the same is -- I don't know  4 that you can say that it's the same. It's different  5 studies done in different time frames. The assessment  6 of the exposure is a bit different.  7 So there are similarities and, you know, the  8 criteria that I applied to come to my conclusion of  9 causality, I think, are similar to what has been  10 applied to smoking and lung cancer. But the data are  11 different. There are different studies, different  12 time frame.  13 Q. Would you say that the data on smoking and  14 lung cancer is stronger than the data on talc and  15 ovarian cancer --  16 MS. PARFITT: Objection.  17 BY MR. JAMES:  18 Q. -- to support a causal conclusion?  19 A. I'm not sure why one would make such a  20 comparison of what is stronger or not. I mean,  21 clearly, we know that smoking and lung cancer is one  22 of the strongest associations between an exposure and  23 a cancer.  24 The odds ratio that is associated with talc  25 use and ovarian cancer is not as large, but I think</p>	<p style="text-align: right;">Page 145</p> <p>1 factors, scientists can look at them and they might  2 weight one more heavily than another.  3 BY MR. JAMES:  4 Q. And you -- you believe that the medical  5 community accepts that smoking is a cause of lung  6 cancer; correct?  7 A. Yes, in general, I think that's true.  8 Q. Does the medical community believe that talc  9 is a cause of ovarian cancer? Is that the medical  10 community's consensus?  11 MS. PARFITT: Objection. Form.  12 THE WITNESS: I'm not sure who you mean  13 by "the medical community." I -- I think that there  14 are certainly -- there's plenty of evidence to support  15 my conclusion. We have evidence very recently from  16 Health Canada that they have come to the same  17 conclusion. So...  18 BY MR. JAMES:  19 Q. Did Health Canada come to a causal  20 conclusion?  21 A. That was my reading of their document.  22 Q. When's the last time you've read the  23 documents from Health Canada?  24 A. Probably within the last few days.  25 Q. Did Plaintiffs' counsel provide those to you?</p>

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<p style="text-align: right;">Page 146</p> <p>1 A. Yes, they did.</p> <p>2 Q. Okay. And your recollection is that the</p> <p>3 Health Canada documents state that talc is a cause of</p> <p>4 ovarian cancer?</p> <p>5 A. I definitely recall them using the "causal"</p> <p>6 language in the document. If -- we can pull it up if</p> <p>7 we want to confirm the precise language.</p> <p>8 Q. Other than identifying Health Canada, which</p> <p>9 you've just done, are there any other bodies or</p> <p>10 scientific organizations or medical organizations that</p> <p>11 you can cite to that have concluded that talc is a</p> <p>12 cause of ovarian cancer?</p> <p>13 A. We've already discussed the IARC conclusion</p> <p>14 that it's possibly carcinogenic.</p> <p>15 Q. And so, again, I'm asking you about -- sorry.</p> <p>16 A. Sorry. Go ahead.</p> <p>17 Q. Sorry. My apologies.</p> <p>18 A. Okay.</p> <p>19 Q. Were you done?</p> <p>20 A. I'm finished.</p> <p>21 Q. So my question, I think, is different than</p> <p>22 that the one you're answering.</p> <p>23 A. Yeah.</p> <p>24 Q. So I'm asking you if you're aware of any</p> <p>25 scientific or medical bodies that have concluded that</p>	<p style="text-align: right;">Page 148</p> <p>1 ovarian cancer. So...</p> <p>2 Q. And when you say talc -- sorry. I think</p> <p>3 you're dropping off a bit, and so I'm jumping in too</p> <p>4 quickly. And I apologize.</p> <p>5 Are you done?</p> <p>6 A. I'm finished, yes.</p> <p>7 Q. You're referring there to a journal article;</p> <p>8 is that right?</p> <p>9 A. It was a summary of -- I think it was</p> <p>10 something like "What's new in ovarian cancer." It was</p> <p>11 published maybe --</p> <p>12 Q. And do you believe the article that you're</p> <p>13 referring to represents the consensus view of the</p> <p>14 medical community?</p> <p>15 MS. PARFITT: Objection. Form.</p> <p>16 THE WITNESS: I don't know that it does</p> <p>17 or not. It wasn't presented as the official opinion</p> <p>18 of that organization.</p> <p>19 BY MR. JAMES:</p> <p>20 Q. And the article that you were mentioning, you</p> <p>21 said increased risk -- or increased association. Is</p> <p>22 that what you said? I don't have the realtime in</p> <p>23 front of me right now.</p> <p>24 A. I don't have it in front of me either.</p> <p>25 Q. Okay.</p>
<p style="text-align: right;">Page 147</p> <p>1 talc is a general cause of ovarian cancer.</p> <p>2 A. I'm not aware of a -- I'm not aware of a</p> <p>3 statement that has been published, other than the ones</p> <p>4 that I mentioned.</p> <p>5 Q. And by others that you mentioned, you're</p> <p>6 referring to the Health Canada document?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. And we will turn back to that, and</p> <p>9 that way we can have a copy in front of us both.</p> <p>10 Okay?</p> <p>11 A. Okay.</p> <p>12 Q. With regard to IARC, again, you understand</p> <p>13 that they have concluded "possible." Correct?</p> <p>14 A. They conclude possible at that point in time,</p> <p>15 which was 2010.</p> <p>16 Q. Have you ever looked to see if any medical</p> <p>17 organizations that represent the gynecologic oncology</p> <p>18 community have concluded that talc is a cause of</p> <p>19 ovarian cancer?</p> <p>20 A. I am aware that, in a recent article in</p> <p>21 Obstetrics and Gynecology, which is one of the leading</p> <p>22 journals in the field, they were summarizing some of</p> <p>23 the information that is new. They were describing the</p> <p>24 Penninkilampi meta-analysis, and their conclusion was</p> <p>25 that talc is associated with increased risk for</p>	<p style="text-align: right;">Page 149</p> <p>1 A. I am recalling something like there is --</p> <p>2 I don't know what the phrasing was. It's associated</p> <p>3 with increased risk or there is an increased risk of</p> <p>4 ovarian cancer with talc use.</p> <p>5 Q. Do you recall if that article made a</p> <p>6 statement on causality?</p> <p>7 A. I don't recall.</p> <p>8 Q. Have you consulted information provided by</p> <p>9 the ACOG or the SGO with respect to the talc ovarian</p> <p>10 cancer hypothesis?</p> <p>11 MS. PARFITT: Objection.</p> <p>12 THE WITNESS: I don't recall if I have</p> <p>13 or not.</p> <p>14 BY MR. JAMES:</p> <p>15 Q. Would you be interested to know the positions</p> <p>16 by the leading organizations for the gynecologic</p> <p>17 oncology community on this issue?</p> <p>18 MS. PARFITT: Objection. Form.</p> <p>19 THE WITNESS: Of course. Any</p> <p>20 information is important to know.</p> <p>21 MR. JAMES: I'm going to mark as</p> <p>22 Exhibit No. 18 a copy of a statement issued by ACOG on</p> <p>23 talc use and ovarian cancer.</p> <p>24 (Exhibit No. 18 was marked for identification.)</p> <p>25 MR. JAMES: I'm handing you two copies</p>

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<p style="text-align: right;">Page 150</p> <p>1 again.</p> <p>2 BY MR. JAMES:</p> <p>3 Q. Dr. Moorman, have you seen this statement</p> <p>4 before?</p> <p>5 A. I don't recall if I have or not. I might</p> <p>6 have.</p> <p>7 Q. Do you see at the bottom of the statement --</p> <p>8 it's a single paragraph -- the statement concludes</p> <p>9 with the quote (as read):</p> <p>10 "There was no medical consensus</p> <p>11 that talcum powder causes ovarian</p> <p>12 cancer."</p> <p>13 Do you see where I was reading?</p> <p>14 A. I do see that.</p> <p>15 Q. Do you disagree with that statement?</p> <p>16 A. Again, going back to the recent conclusion</p> <p>17 from Health Canada, I think that that is some evidence</p> <p>18 of medical consensus. And I do acknowledge that</p> <p>19 this -- what is said here, that -- yeah, I acknowledge</p> <p>20 what they have written here, yes.</p> <p>21 Q. Have you, in preparing your report for this</p> <p>22 litigation, have you taken a look to see what the</p> <p>23 National Cancer Institute has said about the purported</p> <p>24 association between talc and ovarian cancer?</p> <p>25 A. Yes, I have.</p>	<p style="text-align: right;">Page 152</p> <p>1 inadequate evidence of an association?</p> <p>2 A. Yes.</p> <p>3 And if I may address this document --</p> <p>4 Q. If you could give me just one second, and</p> <p>5 then --</p> <p>6 A. Okay.</p> <p>7 Q. -- I'll let you finish, if you don't mind.</p> <p>8 A. Okay.</p> <p>9 Q. Have you considered this before?</p> <p>10 A. Have I --</p> <p>11 MS. PARFITT: Objection.</p> <p>12 BY MR. JAMES:</p> <p>13 Q. Yes.</p> <p>14 A. -- considered it?</p> <p>15 Q. In forming your opinions in this case?</p> <p>16 A. Yes.</p> <p>17 Q. Okay. It's not cited or discussed in your</p> <p>18 report, is it?</p> <p>19 A. I don't know that I have, but again, it's one</p> <p>20 of the documents that I have -- I have seen in my --</p> <p>21 in my work.</p> <p>22 Q. And so within your report, you do discuss</p> <p>23 findings of IARC; correct?</p> <p>24 A. Yes.</p> <p>25 Q. But you don't discuss findings of the NCI; is</p>
<p style="text-align: right;">Page 151</p> <p>1 Q. Okay. And what do they say?</p> <p>2 A. I -- when you are -- I think you are</p> <p>3 referring to the PDQ --</p> <p>4 Q. Yes.</p> <p>5 A. -- from NCI.</p> <p>6 Q. Would you like a copy of it?</p> <p>7 A. I would very much like a copy.</p> <p>8 Q. Fair enough.</p> <p>9 Okay. Dr. Moorman, I'm going to hand you a</p> <p>10 copy of the NCI PDQ on "Ovarian, Fallopian Tube, and</p> <p>11 Primary Peritoneal Cancer, Health Professional</p> <p>12 Version."</p> <p>13 (Exhibit No. 19 was marked for identification.)</p> <p>14 THE WITNESS: Thank you.</p> <p>15 BY MR. JAMES:</p> <p>16 Q. And if you turn to -- this is not paginated,</p> <p>17 unfortunately -- have you gotten there already? Or</p> <p>18 I can count for us. I flipped seven times to get</p> <p>19 there. Looks like you beat me to it.</p> <p>20 A. Okay.</p> <p>21 Q. And do you see here that is this the PDQ you</p> <p>22 were thinking of, Dr. Moorman?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. And in here, do you see that the NCI</p> <p>25 has listed perineal talc exposure as a factor with</p>	<p style="text-align: right;">Page 153</p> <p>1 that right?</p> <p>2 A. I don't think that I specifically addressed</p> <p>3 it.</p> <p>4 Q. Is that because it conflicts with your</p> <p>5 litigation opinion?</p> <p>6 MS. PARFITT: Objection.</p> <p>7 THE WITNESS: No.</p> <p>8 May I ask --</p> <p>9 BY MR. JAMES:</p> <p>10 Q. And, Dr. Moorman, you said you wanted to</p> <p>11 comment, and now is fine.</p> <p>12 A. Let's see. I wanted -- when did you print</p> <p>13 out this version of the PDQ, if I may ask you?</p> <p>14 Q. So do you understand that this is a -- this</p> <p>15 is a -- well, if you turn to the back page of the copy</p> <p>16 that I handed you --</p> <p>17 A. Mm-hmm.</p> <p>18 Q. -- the very back --</p> <p>19 A. Okay.</p> <p>20 Q. -- it says "Updated: December 21, 2018."</p> <p>21 A. Okay.</p> <p>22 Q. All the way on the back page.</p> <p>23 A. Yeah.</p> <p>24 Q. Got it.</p> <p>25 A. Okay. One of the -- I have looked at this</p>

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<p style="text-align: right;">Page 154</p> <p>1 very recently, and on the online version, there were</p> <p>2 some rather what I considered kind of interesting</p> <p>3 conclusions that were made. I'm actually not seeing</p> <p>4 it in this version here. But, for example, they --</p> <p>5 I'm sorry. I don't see it even mentioned here.</p> <p>6 But on the online version, they had listed</p> <p>7 DMPA -- depot medroxyprogesterone acetate -- as</p> <p>8 something that there was adequate evidence of reduced</p> <p>9 effect. And they were basing that -- there are very</p> <p>10 few studies on that to begin with, and as they</p> <p>11 summarized it, again, the last time I looked at it</p> <p>12 online, they said it was inconsistent data, but they</p> <p>13 still summarized that there was adequate evidence.</p> <p>14 And then in regard to things like comparing</p> <p>15 the evidence for something like breastfeeding, they</p> <p>16 said (as read):</p> <p>17 "Based on solid evidence,</p> <p>18 breastfeeding is associated with</p> <p>19 decreased risk of ovarian cancer."</p> <p>20 If we compare the evidence to breastfeeding</p> <p>21 to the evidence for talcum -- talc use, again, the</p> <p>22 online version that I last looked at, it gave a little</p> <p>23 bit more detail about the meta-analyses and so on.</p> <p>24 So the meta-analyses for breastfeeding and</p> <p>25 the meta-analyses for talc, there were a lot of</p>	<p style="text-align: right;">Page 156</p> <p>1 with the NCI?</p> <p>2 A. Okay. Just looking at this, and it came</p> <p>3 up -- it says "with inadequate evidence of an</p> <p>4 association."</p> <p>5 Did you say "adequate" or "inadequate"?</p> <p>6 Q. I said "inadequate."</p> <p>7 A. Okay. My judgment based on the evidence is</p> <p>8 that there is adequate evidence. So I would disagree</p> <p>9 with the NCI in the conclusion that they reached.</p> <p>10 Q. With regard to your discussion that we've had</p> <p>11 just now on the body of evidence to look at</p> <p>12 breastfeeding and ovarian cancer risk --</p> <p>13 A. Yes.</p> <p>14 Q. -- and this is a yes-or-no question -- did</p> <p>15 you conduct a comprehensive review of the scientific</p> <p>16 medical literature and evidence surrounding the</p> <p>17 association between breastfeeding and ovarian cancer?</p> <p>18 A. I did not do as comprehensive a review of</p> <p>19 that literature as I did for the talc.</p> <p>20 Q. And have you, in the course of your career,</p> <p>21 ever looked comprehensively at the body of scientific</p> <p>22 and medical evidence surrounding the association of</p> <p>23 breastfeeding and ovarian cancer to the cell studies,</p> <p>24 the plausibility, the dose-response, have you done all</p> <p>25 of that with respect to breastfeeding and ovarian</p>
<p style="text-align: right;">Page 155</p> <p>1 similarities. There are roughly 30 studies addressing</p> <p>2 each of them. For breastfeeding, it's about a</p> <p>3 25 percent reduction in risk; for talc, about a</p> <p>4 25 percent increased risk.</p> <p>5 When you look at the overall number of</p> <p>6 studies, roughly 90 percent of them support</p> <p>7 breastfeeding -- in terms of just looking at the</p> <p>8 direction of the effect -- about 90 percent of them</p> <p>9 support that breastfeeding is associated with reduced</p> <p>10 risk. When you look at the meta-analyses for talc,</p> <p>11 about 90 percent of the studies have an odds ratio</p> <p>12 greater than 1.</p> <p>13 And so when we look at the overall body of</p> <p>14 evidence, to me, I think it's comparable for</p> <p>15 breastfeeding versus talc, but they conclude that the</p> <p>16 evidence is adequate for breastfeeding but not</p> <p>17 adequate for talc. And they don't really describe</p> <p>18 their methodology for how they reach their</p> <p>19 conclusions.</p> <p>20 So it leaves me just a little bit baffled</p> <p>21 about why is one adequate evidence and one inadequate</p> <p>22 evidence.</p> <p>23 Q. If the NCI's PDQ that's available on their</p> <p>24 website as of today classifies talc as a factor with</p> <p>25 inadequate evidence of an association, do you disagree</p>	<p style="text-align: right;">Page 157</p> <p>1 cancer?</p> <p>2 A. I -- in the course of looking at ovarian</p> <p>3 cancer, I have actually never written a paper that was</p> <p>4 strictly focused on breastfeeding and ovarian cancer,</p> <p>5 and that is typically where one would go through the</p> <p>6 very comprehensive review.</p> <p>7 I am familiar with much of the literature,</p> <p>8 but the degree to which I reviewed the literature was</p> <p>9 not in the same level of detail as I did the talc</p> <p>10 literature.</p> <p>11 Q. And do you know if the scientists at the NCI</p> <p>12 who have commented on the association between</p> <p>13 breastfeeding and ovarian cancer have conducted an</p> <p>14 examination of the scientific and medical literature</p> <p>15 that is more comprehensive, less comprehensive, or the</p> <p>16 same that you've conducted?</p> <p>17 MS. PARFITT: Objection to form.</p> <p>18 THE WITNESS: They do not describe</p> <p>19 their methodology, and so I can't say if it was more</p> <p>20 or less comprehensive.</p> <p>21 BY MR. JAMES:</p> <p>22 Q. Okay. Dr. Moorman, on page 10 of your</p> <p>23 report --</p> <p>24 A. Yes.</p> <p>25 Q. -- you have the -- it's the third full</p>



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<p style="text-align: right;">Page 158</p> <p>1 paragraph down, and you make the statement that</p> <p>2 meta-analyses are "considered to be some of the</p> <p>3 strongest evidence for a causal association."</p> <p>4 Do you see where I'm reading that?</p> <p>5 A. Yes, I do.</p> <p>6 Q. Okay. So that's -- so you've made that</p> <p>7 comment.</p> <p>8 And then further down, you say (as read):</p> <p>9 "Data from meta-analyses are</p> <p>10 particularly important for</p> <p>11 evaluating exposure-disease</p> <p>12 relationships such as talc and</p> <p>13 ovarian cancer where the relative</p> <p>14 risks for most individuals are</p> <p>15 approximately 1.2 to 1.5."</p> <p>16 Do you see where I've read that?</p> <p>17 A. Yes, I do.</p> <p>18 Q. Can you cite any published authority for the</p> <p>19 statement that meta-analyses are considered to be some</p> <p>20 of the strongest evidence for causal association?</p> <p>21 A. I'm trying to think of whether it's a</p> <p>22 published source. It's something that I have seen,</p> <p>23 for example, multiple times in lectures and so on</p> <p>24 where it will give a hierarchy of evidence. And</p> <p>25 meta-analyses combining data from multiple studies is</p>	<p style="text-align: right;">Page 160</p> <p>1 data as reported. It could not correct the bias.</p> <p>2 Q. So to the extent the meta-analyses are</p> <p>3 collecting data from underlying studies that are</p> <p>4 flawed by recall bias or confounding, those</p> <p>5 inaccuracies carry over into the meta-analyses;</p> <p>6 correct?</p> <p>7 MS. PARFITT: Objection.</p> <p>8 THE WITNESS: I would not characterize</p> <p>9 it as "carry over." We recognize when we combine the</p> <p>10 data from the meta-analyses, it is combining the</p> <p>11 reported data. If there were biases that either led</p> <p>12 to an underestimate or an overestimate of the relative</p> <p>13 risk, they are not correcting that.</p> <p>14 BY MR. JAMES:</p> <p>15 Q. And do you caution the reader of your MDL</p> <p>16 report about that limitation to meta-analyses anywhere</p> <p>17 in your report?</p> <p>18 A. I do not specifically make that caution, no.</p> <p>19 Q. The meta-analyses that we have on the talc</p> <p>20 ovarian cancer issue, they are progressed over a</p> <p>21 period of time; correct?</p> <p>22 A. That is correct.</p> <p>23 Q. And we know that there's been two recent</p> <p>24 meta-analyses. And all of the meta-analyses that have</p> <p>25 been published on this association are in some ways</p>
<p style="text-align: right;">Page 159</p> <p>1 often put at kind of the top of the pyramid for making</p> <p>2 causal assessments.</p> <p>3 I want to say that maybe some of the</p> <p>4 evidence-based medicine -- I know that there are</p> <p>5 online summaries of evidence-based medicine that would</p> <p>6 describe meta-analyses as kind of some of the</p> <p>7 strongest evidence for causality.</p> <p>8 Q. Meta-analyses combine data from underlying</p> <p>9 studies; correct?</p> <p>10 A. That is correct.</p> <p>11 Q. Meta-analyses do not correct for bias and</p> <p>12 confounding in underlying studies; correct?</p> <p>13 A. The meta-analysis itself -- no. They combine</p> <p>14 the data. They...</p> <p>15 Q. And -- were you finished?</p> <p>16 A. Yeah. They do not correct for the bias.</p> <p>17 Q. Meta-analyses, for example, do not eliminate</p> <p>18 recall bias if there is a recall bias problem in the</p> <p>19 underlying studies; correct?</p> <p>20 A. That is correct. Meta-analyses cannot do</p> <p>21 that.</p> <p>22 Q. And the meta-analyses studies that you</p> <p>23 reviewed and discussed in your report all concede that</p> <p>24 point, don't they?</p> <p>25 A. They acknowledge that they are combining the</p>	<p style="text-align: right;">Page 161</p> <p>1 overlapping; correct?</p> <p>2 MS. PARFITT: Objection to form.</p> <p>3 THE WITNESS: The meta-analyses, their</p> <p>4 intent is to combine all the published data. So, yes,</p> <p>5 there is some overlap. More recent ones would have</p> <p>6 included studies that had been published in prior</p> <p>7 meta-analyses.</p> <p>8 BY MR. JAMES:</p> <p>9 Q. And recognizing that meta-analyses can differ</p> <p>10 here and there for various -- various reasons, the</p> <p>11 talc ovarian cancer meta-analyses generally pull data</p> <p>12 from the same body of literature; is that fair?</p> <p>13 A. Yes.</p> <p>14 Q. And any suggestion that because you have</p> <p>15 multiple meta-analyses reaching around the same odds</p> <p>16 ratio and that that somehow demonstrates consistency,</p> <p>17 isn't that a little bit misleading?</p> <p>18 MS. PARFITT: Objection. Form.</p> <p>19 THE WITNESS: I think that when we look</p> <p>20 at it, when we see that, early on, you see some</p> <p>21 meta-analyses were done, I want to say maybe in the</p> <p>22 '90s, and then as more data are added in, you -- they</p> <p>23 still settled in on roughly the same summary odds</p> <p>24 ratio as even more data were accumulated.</p> <p>25 Sometimes there is a concern that early on</p>



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<p style="text-align: right;">Page 162</p> <p>1 the studies with positive associations are published,  2 and then after -- as time goes on, other studies are  3 done that didn't find that association. So you would  4 expect that the summary odds ratio might become  5 attenuated as more studies were added.  6 And that's not the situation with the talc  7 literature. It's been pretty consistent from the  8 meta-analyses done in the 1990s to the 2000s to 2018.  9 BY MR. JAMES:  10 Q. And the 2018 meta-analyses that they are  11 grabbing in the studies from decades prior, they're  12 grabbing in the same studies that the 1990s  13 meta-analyses grabbed in; right?  14 MS. PARFITT: Objection. Form.  15 THE WITNESS: Yeah. The purpose is to  16 include all of the published data. So yes, of course.  17 BY MR. JAMES:  18 Q. And in your report, you place significant  19 emphasis -- if that's a fair word -- on meta-analyses.  20 Is that a fair way to describe it?  21 MS. PARFITT: Objection.  22 THE WITNESS: Yes, I think I -- I think  23 that's fair to characterize it that way.  24 BY MR. JAMES:  25 Q. You -- did you read the conclusions of all of</p>	<p style="text-align: right;">Page 164</p> <p>1 opportunity to ask questions afterwards.  2 A. Some of them did raise some concerns about  3 whether or not it could be a causal association.  4 Q. We're going to take a look at the studies  5 shortly as I grab these folders out.  6 Did you report in your report for the MDL  7 any of the cautionary language from these  8 meta-analyses about causation?  9 A. I -- in my report, when you look at some of  10 the cautionary language, they will refer to perhaps  11 concerns about recall bias or things like that.  12 In my report, I went through potential  13 biases and how I weighed that and whether I thought it  14 was an important concern in the studies that  15 contributed to the meta-analyses.  16 Q. Did you talk about any weaknesses or problems  17 with the meta-analyses themselves?  18 A. I don't believe I did in my report.  19 Q. And just -- okay.  20 MR. JAMES: I'm going to mark as  21 Exhibit No. 20 a meta-analysis that I think that  22 you've mentioned this morning. It's the Penninkilampi  23 study.  24 THE WITNESS: Yes.  25 MR. JAMES: I'm going to hand you two</p>
<p style="text-align: right;">Page 163</p> <p>1 the meta-analyses performed to date?  2 A. I did.  3 Q. Do any of the authors of the meta-analyses  4 performed to date conclude causation?  5 A. If I may take a minute to address the issue  6 of how causation is reported in the epidemiologic  7 literature.  8 Q. With all due respect, Doctor, if you could  9 just answer the question.  10 A. I think that they typically refer to, like,  11 increased risk. I don't know that any of them refer  12 to -- made the conclusion of -- I don't know that they  13 used the word "causal."  14 Q. In fact, many of the meta-analyses  15 specifically caution against a causal interpretation,  16 don't they?  17 MS. PARFITT: Objection.  18 THE WITNESS: Once again, if -- may  19 I take a moment to address how the word --  20 BY MR. JAMES:  21 Q. Because my time is limited --  22 A. Okay.  23 Q. -- I'm really going to have to respectfully  24 ask you to answer my question to the extent that  25 you're able, and then your counsel will have an</p>	<p style="text-align: right;">Page 165</p> <p>1 copies again.  2 (Exhibit No. 20 was marked for identification.)  3 MR. JAMES: It's marked as Exhibit 20.  4 THE WITNESS: Would this be a good time  5 to take a break before we get into --  6 MR. JAMES: Absolutely.  7 THE WITNESS: Okay.  8 THE VIDEOGRAPHER: Going off record at  9 1:48 p.m.  10 (Recess taken from 1:48 p.m. to 2:03 p.m.)  11 THE VIDEOGRAPHER: Back on record at  12 2:03 p.m.  13 BY MR. JAMES:  14 Q. Dr. Moorman, I handed you had a copy of the  15 Penninkilampi paper.  16 A. I'm sorry, the papers were moved while  17 I was...  18 Q. It was marked as Exhibit 20, I believe.  19 Here, I have an extra, if that would speed  20 things along. I'm sure it's somewhere in there.  21 A. It got moved around. Oh, here it is.  22 Q. Okay. Again, Dr. Moorman, this is one of the  23 meta-analyses that you reviewed to inform your  24 opinions in this case; correct?  25 A. That is correct.</p>

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<p>1 Q. It's also one of the more recent 2 meta-analyses on the issue; correct? 3 A. That's correct. 4 Q. And what did the Penninkilampi authors say 5 about causation? 6 A. Okay. They describe perineal talc is 7 associated with a 24 to 39 percent increased risk of 8 ovarian cancer. 9 And this is a very typical way that it would 10 be described in the epidemiologic literature. It -- 11 as described very eloquently in some articles in the 12 American Journal of Public Health last spring, they 13 noted that, to the detriment of the science, that 14 epidemiologists are frequently loathe -- or don't 15 often use the word "causal" when they describe a risk 16 factor; and, in part, this is because we are relying 17 on observational data. This is not an experimental 18 study. 19 And so, many times, reviewers, if they refer 20 to "we found that talc caused ovarian cancer," they 21 would object to that, saying that it wasn't a 22 randomized controlled trial. 23 But in this series of articles in the 24 American Journal of Public Health, they indicated that 25 the tendency not to use the word "causal" is to the</p>	<p>1 "Hence, while perineal talc use 2 has not been shown to be safe, in 3 a similar regard, a certain causal 4 link between talc use and ovarian 5 cancer has not yet been 6 established." 7 That's what the authors say; correct? 8 A. That's what they say, yes. 9 Q. Okay. So they caution that causation has not 10 been established; correct? 11 MS. PARFITT: Objection. 12 THE WITNESS: They say a certain causal 13 link has not been established -- not yet been 14 established. 15 BY MR. JAMES: 16 Q. And you're here today testifying about what 17 you believe to be evidence supporting the causal link; 18 correct? 19 A. Yes, I am -- I am. 20 Q. Okay. And so where in your report do you 21 advise the reader that the Penninkilampi authors 22 expressed reservations about causation? 23 A. I do not have anything like that in my 24 report. 25 MR. JAMES: The next meta-analysis that</p>
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<p>1 detriment of the science. It's like "Why would we be 2 looking at risk factors for a disease if we didn't 3 think that it caused the disease?" 4 So I think that when an epidemiologist sees 5 an increased risk of ovarian cancer, we are thinking 6 that this is -- this causes ovarian cancer. 7 Q. But epidemiologists, including many of the 8 meta-analyses that we're about to review, have talked 9 about cause, haven't they? 10 MS. PARFITT: Objection. 11 THE WITNESS: Some of them have 12 addressed, yes. 13 BY MR. JAMES: 14 Q. For example, Penninkilampi doesn't seem shy 15 of the word "cause." If we look at page 42, 16 Dr. Moorman, we see, in the top paragraph in the 17 left-hand column, at the bottom of that paragraph, the 18 Penninkilampi authors write, quote -- this is the last 19 sentence -- 20 A. Wait. Page 42? 21 Q. Page 42. 22 A. Yes. 23 Q. It's the top left paragraph. The bottom last 24 sentence of that paragraph, the authors state 25 (as read):</p>	<p>1 we can look at is the Berg -- or Berge meta-analysis. 2 I'm going to mark that as Exhibit 21. 3 (Exhibit No. 21 was marked for identification.) 4 BY MR. JAMES: 5 Q. Do the Berge authors conclude that the 6 evidence is sufficient to support a causation 7 conclusion? 8 A. They do not make that conclusion, no. 9 Q. In fact, they actually -- they do address 10 causation, don't they? 11 A. They state their opinion, yes. 12 Q. Okay. And their opinion is expressed several 13 times throughout the article. The first is in the 14 abstract of the article; correct? 15 If we look at the abstract, it's the first 16 page of the article, page 248, the last sentence of 17 the abstract. Do you see that? 18 A. Yes, I do. 19 Q. They say (as read): 20 "The heterogeneity of results by 21 study design, however, detracts 22 from a causal interpretation of 23 this association." 24 Correct? 25 A. That's what it says, yes.</p>

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<p style="text-align: right;">Page 170</p> <p>1 Q. Where do you advise the reader of your MDL 2 report that the authors of the Berge meta-analyses 3 expressed reservations about causation? 4 MS. PARFITT: Objection. Form. 5 THE WITNESS: That is not in my report. 6 BY MR. JAMES: 7 Q. Do you see at the very the end of article, at 8 the very last page on 256, before the acknowledgment 9 section, again, the authors conclude the article with 10 a statement that the results (as read): 11 "do not support a causal 12 interpretation of the 13 association." 14 Do you see where I'm reading? 15 A. They say some -- several aspects of the 16 results there. 17 Q. Fair enough. 18 A. Yes. 19 Q. So let's just read the sentence in full. So 20 they say (as read): 21 "Several aspects of our results, 22 including the heterogeneity of 23 results between case-control and 24 cohort studies, however, do not 25 support a causal interpretation of</p>	<p style="text-align: right;">Page 172</p> <p>1 MR. JAMES: And I'm going to reserve 2 the time that it takes -- 3 MS. PARFITT: No, you're not going to 4 reserve the time. You asked her a question; she was 5 answering it. 6 MR. JAMES: It was a yes-or-no 7 question. 8 MS. PARFITT: You can object -- it was 9 not, Scott. Let's have her finish her statement, and 10 you can decide what you want to do with it. But 11 she's going to finish her comment. 12 Dr. Moorman, please. 13 THE WITNESS: So I think that in my 14 report, I did address the aspects of the heterogeneity 15 of the results, although I might not specifically have 16 addressed -- said anything specifically about the 17 limitation of the Berge. 18 BY MS. PARFITT: 19 Q. Right. So my question, which was very 20 precise, is where do you note in your MDL report the 21 causation reservations of the Berge authors? 22 MS. PARFITT: Objection. 23 THE WITNESS: And as I stated before, 24 that is not in -- that specific reservations of the 25 Berge authors, I do not have that in my -- in my</p>
<p style="text-align: right;">Page 171</p> <p>1 the association." 2 That's what they say; correct? 3 A. Right. 4 Q. And, again, do you advise the readers of your 5 MDL report that those are the conclusions of the Berge 6 meta-analysis? 7 MS. PARFITT: Objection. Form. 8 THE WITNESS: I do not specifically do 9 that. But in my report, I think that I really address 10 some of the heterogeneity of the results between 11 case-control and cohort studies and why some of the 12 differences might be observed and, for example, some 13 of the biases in the cohort studies would lead to an 14 underestimate of the -- 15 BY MR. JAMES: 16 Q. And, Dr. Moorman -- 17 MS. PARFITT: Excuse me -- 18 BY MR. JAMES: 19 Q. -- I'm going to ask you questions about that. 20 MS. PARFITT: -- Mr. James, she was in 21 the middle of her sentence. 22 MR. JAMES: I object to the 23 nonresponsive portion of her answer. 24 MS. PARFITT: You may, but let her 25 complete her answer.</p>	<p style="text-align: right;">Page 173</p> <p>1 report. 2 BY MS. PARFITT: 3 Q. The next meta-analyses is -- and I'm working 4 backwards chronologically -- is the Langseth 5 meta-analyses. 6 Are you familiar with that paper? 7 A. Yes, I have seen that paper. 8 MR. JAMES: And I'm going to mark the 9 Langseth paper as Exhibit No. 23. 10 (Exhibit No. 22 was marked for identification.) 11 MR. JAMES: I'm handing you two copies. 12 MR. DONATH: 23 or 22? 13 MS. BRENNAN: 22. 14 MR. JAMES: It's 22. So we'll sub 15 stickers. 16 BY MR. JAMES: 17 Q. So Langseth is 22. Did the authors of 18 Langseth conclude that causation is shown? Yes or no, 19 please. 20 A. They -- if I may take just a moment to read 21 through it -- 22 Q. Sure. 23 A. -- as it... 24 No, they do not. 25 Q. And, in fact, the authors do address the</p>

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<p>1 issue of causation on page 359 of the article; 2 correct, under the section "Proposal to research 3 community." 4 Do you see where I am? 5 A. I do see that. 6 Q. Okay. And the authors state (as read): 7 "The current body of experimental 8 and epidemiological evidence is 9 insufficient to establish a causal 10 association between perineal use 11 of talc and ovarian cancer risk." 12 A. That is correct. And, again, noting the date 13 of this paper, 2008. So quite a lot of evidence has 14 emerged since then. And one of the authors on the 15 paper has since concluded that there is sufficient 16 evidence for causality. 17 Q. And you're talking about a paid expert in 18 this case; correct? 19 MS. PARFITT: Objection. 20 THE WITNESS: Dr. Siemiatycki, who's a 21 paid expert, well-respected epidemiologist. 22 BY MR. JAMES: 23 Q. And he's a paid expert in this litigation for 24 the Plaintiffs; correct? 25 MS. PARFITT: Objection.</p>	<p>1 conclude that the evidence was sufficient to support 2 causation? 3 A. No, they did not. 4 Q. Okay. And, in fact, the authors did address 5 causation in their paper in the abstract; correct? 6 MS. PARFITT: Objection. Form. 7 THE WITNESS: Yes, they do. 8 BY MR. JAMES: 9 Q. Okay. And at page 195 in the conclusion of 10 the abstract, the authors say (as read): 11 "The available observational data 12 do not support the existence of a 13 causal relationship between 14 perineal talc exposure and 15 increased risk of epithelial 16 ovarian cancer. Selection bias 17 and uncontrolled confounding may 18 account for the positive 19 associations seen in prior 20 epidemiological studies." 21 That's what the authors say; correct? 22 A. That is what these authors say. 23 Q. And did you report to the reader of your MDL 24 report the Huncharek authors' reserved judgment on 25 causation?</p>
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<p>1 THE WITNESS: That is correct. 2 BY MR. JAMES: 3 Q. Where in your report -- and this is a 4 yes-or-no question, or actually it's not "yes" or 5 "no." You tell me if it exists or not. 6 Where in your report do you show to the 7 reader of the report that the Langseth authors 8 reserved judgment on causation? 9 MS. PARFITT: Objection to form. 10 THE WITNESS: I did not specifically 11 include that in my report. 12 BY MR. JAMES: 13 Q. Dr. Moorman, have you reviewed the Huncharek 14 2003 meta-analyses? 15 A. Yes, I have. 16 MR. JAMES: And I'm going to mark the 17 Huncharek 2003 meta-analyses as Exhibit No. 23, and 18 we'll switch stickers at the break. 19 (Exhibit No. 23 was marked for identification.) 20 BY MR. JAMES: 21 Q. I'm handing you two copies, Dr. Moorman. 22 Is this another meta-analysis that you 23 reviewed in forming your opinions in this case? 24 A. Yes, it is. 25 Q. Okay. Did the authors of this meta-analysis</p>	<p>1 MS. PARFITT: Objection. 2 THE WITNESS: As with the other 3 meta-analysis, this is now 16 years old, and I did not 4 specifically report that, but I did consider in my 5 report the biases and uncontrolled confounding that 6 they were concerned about. 7 BY MR. JAMES: 8 Q. Do any of the -- there are a handful of 9 meta-analyses that precede the Huncharek 2003 10 meta-analyses; correct? 11 A. That is correct. 12 Q. Do any of those meta-analyses conclude 13 causation? 14 MS. PARFITT: Objection. Form. 15 THE WITNESS: I don't believe that they 16 do. 17 BY MR. JAMES: 18 Q. And returning back to our discussion on the 19 Langseth meta-analyses, you noted sort of -- when I 20 asked you a question about their conclusions on 21 causation, you noted the timing of the article; 22 correct? 23 A. Yes. 24 Q. You noted that the article was published 25 in --</p>

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<p style="text-align: right;">Page 178</p> <p>1 A. 2008.</p> <p>2 Q. -- 2008?</p> <p>3 A. Yes.</p> <p>4 Q. That is right?</p> <p>5 So is your opinion that the evidence in 2008</p> <p>6 was, in fact, insufficient to support a causal</p> <p>7 conclusion but has now transitioned to a status where</p> <p>8 it is sufficient?</p> <p>9 MS. PARFITT: Objection. Form.</p> <p>10 THE WITNESS: You have asked me that</p> <p>11 question in -- that or a similar question before.</p> <p>12 There is a growing body of evidence.</p> <p>13 I would be hard-pressed to say at what point in time,</p> <p>14 you know, it reached the tipping point where there is</p> <p>15 enough evidence to say that there is this causal</p> <p>16 association.</p> <p>17 At this point in time, I feel very confident</p> <p>18 in saying that, but I can't say when sufficient data</p> <p>19 accumulated to say that. I think that's an impossible</p> <p>20 answer -- or an impossible question to answer.</p> <p>21 BY MR. JAMES:</p> <p>22 Q. And the reason I asked it again is because</p> <p>23 you made the qualification in discussing the Langseth</p> <p>24 paper. When I asked you about the authors'</p> <p>25 conclusions on causation, you specifically noted that</p>	<p style="text-align: right;">Page 180</p> <p>1 A. No --</p> <p>2 MS. PARFITT: Objection.</p> <p>3 THE WITNESS: -- for the same reasons</p> <p>4 I described prior.</p> <p>5 MR. JAMES: And I'm going to mark the</p> <p>6 2013 Terry paper as Exhibit 24.</p> <p>7 (Exhibit No. 24 was marked for identification.)</p> <p>8 MR. JAMES: I think I'm back on track</p> <p>9 on the numbers. I'm handing you two copies.</p> <p>10 BY MR. JAMES:</p> <p>11 Q. And again, Dr. Moorman, you've used this</p> <p>12 paper to inform your opinions in the case; correct?</p> <p>13 A. That is correct.</p> <p>14 Q. And if you look at the last page of the text</p> <p>15 on 820 with me, you see in the last paragraph, which</p> <p>16 is -- the last paragraph on page 820, the authors</p> <p>17 state at the top right-hand column (as read):</p> <p>18 "More work is needed to understand</p> <p>19 how genital powders may exert a</p> <p>20 carcinogenic effect and which</p> <p>21 constituents may be involved."</p> <p>22 Do you see that sentence?</p> <p>23 A. Yes, I do.</p> <p>24 Q. There, the authors are again noting that --</p> <p>25 let me rephrase it this way.</p>
<p style="text-align: right;">Page 179</p> <p>1 it was a paper from the 2008 time frame; correct?</p> <p>2 A. Right. And I think that -- I think that it</p> <p>3 is obvious that one of the authors, considering all</p> <p>4 the additional data that's accumulated, would -- has</p> <p>5 made a different conclusion at this point in time.</p> <p>6 Q. And the author you're referring to there is</p> <p>7 the author that we were discussing as a paid expert in</p> <p>8 this case; correct?</p> <p>9 MS. PARFITT: Objection. Form.</p> <p>10 THE WITNESS: Yes. We established he</p> <p>11 is a paid expert and, at the same time, a very</p> <p>12 well-respected epidemiologist.</p> <p>13 BY MR. JAMES:</p> <p>14 Q. There's also a pooled analysis that you</p> <p>15 looked at to inform your opinions in this case;</p> <p>16 correct?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. And the pooled analysis is the Terry</p> <p>19 2013 paper?</p> <p>20 A. That is correct.</p> <p>21 Q. Okay. Did the Terry 2013 paper conclude</p> <p>22 cause?</p> <p>23 MS. PARFITT: Objection. Form.</p> <p>24 BY MR. JAMES:</p> <p>25 Q. It's yes or no.</p>	<p style="text-align: right;">Page 181</p> <p>1 The authors there are reserving judgment on</p> <p>2 causation; correct?</p> <p>3 MS. PARFITT: Objection. Form.</p> <p>4 THE WITNESS: I don't think that that</p> <p>5 is how I would necessarily interpret that.</p> <p>6 BY MR. JAMES:</p> <p>7 Q. Okay.</p> <p>8 A. I think that, first of all, basically, any</p> <p>9 scientific paper concludes with "more work is needed."</p> <p>10 And so it's talking about, you know, trying to advance</p> <p>11 scientific knowledge by understanding the biological</p> <p>12 mechanism.</p> <p>13 But I don't see anything -- any statement</p> <p>14 there related to causal. It says "small to moderate</p> <p>15 increased risk of ovarian cancer." And as I've stated</p> <p>16 previously, basically, when we talk about risk</p> <p>17 factors, we are thinking that this is something that</p> <p>18 causes this cancer.</p> <p>19 Q. So in your professional opinion, the word</p> <p>20 "risk factor" is equivalent to "causation"?</p> <p>21 A. Not always equivalent. And if I may give an</p> <p>22 example.</p> <p>23 Women who have higher educational level are</p> <p>24 at increased risk for breast cancer. And so higher</p> <p>25 education level, we might describe it as a risk factor</p>



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<p style="text-align: right;">Page 182</p> <p>1 for breast cancer. But, clearly, going to college is  2 not going to cause breast cancer. It's the other  3 factors that are associated with it, like your  4 childbearing patterns, alcohol use, other things.  5 But when we talk about a risk factor and  6 there is a plausible biological mechanism to get from  7 that exposure to cancer, I think that "risk factor"  8 and "cause" are pretty synonymous.  9 Q. But to say something is associated in  10 epidemiologic literature is not to say that it's  11 causal.  12 Do you agree with that?  13 MS. PARFITT: Objection.  14 THE WITNESS: Yes. That's kind of  15 epi 101, that everything that is associated is not  16 necessarily a cause.  17 BY MR. JAMES:  18 Q. To reach a causal conclusion, it's -- one  19 must undertake a more in-depth analysis; correct?  20 A. As I did for this, and as all of us in this  21 room are well aware, the Bradford Hill framework is a  22 framework for taking the data and leading to making a  23 judgment on causality.  24 Q. So if a paper refers to something as a risk  25 factor or a potential risk factor or a modifiable risk</p>	<p style="text-align: right;">Page 184</p> <p>1 meta-analyses.  2 Q. Are you aware of any flaws in the  3 Penninkilampi study?  4 MS. PARFITT: Objection. Form.  5 THE WITNESS: Overall, I felt like it  6 seemed to be a very well done meta-analysis. When we  7 look at judgments of meta-analyses, we like to see  8 things like, you know, what were the search terms they  9 used? What were the criteria for including or  10 excluding studies? Were the study questions defined  11 in advance?  12 And when I look through all of that,  13 I judged it overall to be a very well done  14 meta-analysis.  15 BY MR. JAMES:  16 Q. And so your answer to the question that  17 I asked is no; correct?  18 MS. PARFITT: Objection.  19 THE WITNESS: I -- I don't see any  20 serious problems with any -- you characterized it as  21 "flaws." I don't -- I don't see anything that I would  22 characterize as a flaw in their methodology.  23 BY MR. JAMES:  24 Q. If you look at page 47 with me, Dr. Moorman,  25 in the "Conclusions" section.</p>
<p style="text-align: right;">Page 183</p> <p>1 factor, that terminology by itself does not suggest  2 that the authors of that paper have concluded  3 causation; correct?  4 A. I -- I think that I have answered that  5 question already.  6 When they're -- if they refer to it as a  7 risk factor, they may or may not have gone through the  8 full Bradford Hill evaluation of it. And then, also,  9 some things that we refer to as risk factors, where  10 there is not a plausible biological mechanism, we  11 wouldn't equate risk factor and cause in that  12 situation as well.  13 Q. So you -- returning back to the Penninkilampi  14 meta-analysis, which I believe will be somewhere in  15 that pile --  16 A. Mm-hmm.  17 Q. -- you cite Penninkilampi 14 times in your  18 report.  19 Were you aware of that?  20 A. I don't know how many times I've cited it.  21 Q. It's one of the most cited articles in your  22 report.  23 Were you aware of that?  24 A. I know that I referred to it frequently  25 because it is one of the most up-to-date, most recent</p>	<p style="text-align: right;">Page 185</p> <p>1 The conclusions section, I think you had  2 previously read in the first sentence of the  3 conclusions, the percentage increased risk reported in  4 the paper.  5 The second sentence says (as read):  6 "While the results of case-control  7 studies are prone to recall bias,  8 especially with intense media  9 attention following the  10 commencement of litigation in  11 2014, the confirmation of an  12 association in cohort studies  13 between perineal talc use and  14 serous invasive ovarian cancer is  15 suggestive of a causal  16 association."  17 Do you see where I was reading?  18 A. Yes, I do.  19 Q. Okay. So here we see that Penninkilampi is  20 acknowledging the recall bias problems of the  21 case-control studies; correct?  22 A. They are acknowledging that it is a  23 possibility.  24 Q. Okay.  25 A. Okay.</p>

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<p style="text-align: right;">Page 186</p> <p>1 MS. PARFITT: Wait. Are you still --</p> <p>2 thank you.</p> <p>3 Please, finish.</p> <p>4 THE WITNESS: Yes. And, you know, this</p> <p>5 is, again, one of the things that I addressed in my</p> <p>6 report. I very carefully considered recall bias and</p> <p>7 how it could have contributed or not to the elevated</p> <p>8 risk that has been seen across so many studies.</p> <p>9 BY MR. JAMES:</p> <p>10 Q. And one of the -- so within the sentence</p> <p>11 "after acknowledging the recall bias" that we just</p> <p>12 discussed, the Penninkilampi authors emphasize the</p> <p>13 confirmation of an association in cohort studies.</p> <p>14 Do you see that?</p> <p>15 A. I do.</p> <p>16 Q. Okay. Are there cohort studies that support</p> <p>17 the association?</p> <p>18 A. There are three cohort studies that have</p> <p>19 examined talc use and ovarian cancer, and you're</p> <p>20 probably very much aware of them: the Gonzalez study,</p> <p>21 the Houghton -- which was from the Sister Study -- the</p> <p>22 Houghton study, which was the Women's Health</p> <p>23 Initiative; and the Nurses' Health Study, which has</p> <p>24 been published in several of them.</p> <p>25 And as they indicate in here, when you look</p>	<p style="text-align: right;">Page 188</p> <p>1 entirely sure of their rationale for why they looked</p> <p>2 at one rather than the other. There were some</p> <p>3 differences between the studies; like the later study,</p> <p>4 the unexposed group was actually women who had used it</p> <p>5 for less than once a week rather than never used. And</p> <p>6 so they don't really go into the detail why they made</p> <p>7 that decision.</p> <p>8 But investigators will make a judgment</p> <p>9 sometimes about which of a -- which studies to include</p> <p>10 when there's more than one publication from a given</p> <p>11 study.</p> <p>12 Q. And do you know that with respect to the NHS</p> <p>13 cohort, they have published two studies arising from</p> <p>14 the NHS cohort looking at the issue of talc and the</p> <p>15 ovarian cancer association; correct?</p> <p>16 MS. PARFITT: Objection. Form.</p> <p>17 THE WITNESS: They actually -- they</p> <p>18 have published two studies, and data from the Nurses'</p> <p>19 Health Study was also included in at least one other</p> <p>20 publication. I believe Cramer was -- I'm not sure if</p> <p>21 he was the first author or one of the authors where</p> <p>22 they combined data.</p> <p>23 BY MR. JAMES:</p> <p>24 Q. The NHS cohort has published two papers with</p> <p>25 respect to the talc/ovarian cancer association;</p>
<p style="text-align: right;">Page 187</p> <p>1 at the studies that reported on invasive serous -- and</p> <p>2 if you will give me just a second here -- find it on</p> <p>3 this paper. Okay.</p> <p>4 When they report in Table 2 that combining</p> <p>5 the two studies that reported on the histologic</p> <p>6 subtypes, there was a significantly increased risk of</p> <p>7 serous invasive cancer in the cohort studies as well</p> <p>8 in the case-control studies.</p> <p>9 Q. Sorry.</p> <p>10 A. Okay.</p> <p>11 Q. You did pause there.</p> <p>12 A. I did.</p> <p>13 The one study that really found no</p> <p>14 association whatsoever with talc was the Gonzalez</p> <p>15 study, the Sister Study, that has numerous problems</p> <p>16 with it, most specifically in their assessment of the</p> <p>17 talc exposure, the sample size, the duration of</p> <p>18 follow-up.</p> <p>19 Q. And returning to my question about this</p> <p>20 article, were you aware that the Penninkilampi authors</p> <p>21 didn't factor in the Gates 2010 data at all?</p> <p>22 A. When one does a meta-analysis, sometimes when</p> <p>23 data are reported in a couple of reports, you have to</p> <p>24 make a decision about which one to include.</p> <p>25 I believe they used data from the -- I'm not</p>	<p style="text-align: right;">Page 189</p> <p>1 correct?</p> <p>2 A. I just answered the question. It's -- data</p> <p>3 from it was also in another -- in another publication.</p> <p>4 Q. The Gertig 2000 paper reported on the</p> <p>5 talc/ovarian cancer association; correct?</p> <p>6 A. Yes.</p> <p>7 Q. And that's an NHS publication; correct?</p> <p>8 A. It is.</p> <p>9 Q. The Gates 2010 paper reported on talc/ovarian</p> <p>10 cancer association; correct?</p> <p>11 A. That is correct.</p> <p>12 Q. And that's an NHS publication; correct?</p> <p>13 A. Correct.</p> <p>14 Q. An NHS publication of 2010 offered an</p> <p>15 additional ten years of follow-up to the talc/ovarian</p> <p>16 cancer hypothesis; correct?</p> <p>17 MS. PARFITT: Objection. Form.</p> <p>18 THE WITNESS: It was additional</p> <p>19 follow-up, but no update on exposure during that</p> <p>20 time -- period of follow-up.</p> <p>21 BY MR. JAMES:</p> <p>22 Q. For that period of follow-up, they followed</p> <p>23 the study participants for an additional ten years;</p> <p>24 correct?</p> <p>25 MS. PARFITT: Objection. Form.</p>

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<p style="text-align: right;">Page 190</p> <p>1 THE WITNESS: Yes. I answered that</p> <p>2 already. Yes.</p> <p>3 BY MR. JAMES:</p> <p>4 Q. And you agree more follow-up for a cohort is</p> <p>5 better; correct?</p> <p>6 MS. PARFITT: Objection. Form.</p> <p>7 THE WITNESS: In general, longer</p> <p>8 follow-up would be desirable. However, when they're</p> <p>9 not updating exposure information, that could -- that</p> <p>10 creates a bias, a possible bias.</p> <p>11 BY MR. JAMES:</p> <p>12 Q. Do you think the 2010 data and the Gates</p> <p>13 paper with respect to the talc ovarian cancer issue is</p> <p>14 superior to the 2000 data in the Gertig 2000 paper?</p> <p>15 MS. PARFITT: Objection. Form.</p> <p>16 THE WITNESS: I already made the point</p> <p>17 that how they define the unexposed group was different</p> <p>18 between the two studies; and so including some women</p> <p>19 who had low levels of exposure in their unexposed</p> <p>20 group, that could potentially have had the effect of</p> <p>21 attenuating the association.</p> <p>22 And so, you know, longer follow-up is</p> <p>23 generally better, but some of the other things they</p> <p>24 did, that's -- they were not so good.</p> <p>25</p>	<p style="text-align: right;">Page 192</p> <p>1 Q. So one of your complaints --</p> <p>2 A. So I --</p> <p>3 Q. Sorry.</p> <p>4 A. Okay.</p> <p>5 Q. One of your issues with the cohort studies is</p> <p>6 lack of follow-up; correct?</p> <p>7 A. For -- yes, for -- there are -- it's one of</p> <p>8 several concerns I have about the cohort studies.</p> <p>9 Q. And the Penninkilampi study did not factor in</p> <p>10 the additional period of follow-up through the 2010</p> <p>11 paper; correct?</p> <p>12 A. I don't believe they did. I think they went</p> <p>13 with the earlier study.</p> <p>14 Q. In fact, they didn't even cite to the Gates</p> <p>15 2010 data, did they?</p> <p>16 MS. PARFITT: Objection.</p> <p>17 THE WITNESS: No, they -- they didn't.</p> <p>18 BY MR. JAMES:</p> <p>19 Q. And they didn't offer any explanation about</p> <p>20 why they went with the earlier study, did they?</p> <p>21 A. Not that I recall.</p> <p>22 Q. And do you understand that in the 2010 NHS</p> <p>23 paper through Gates, the association with serous</p> <p>24 ovarian cancer washed out?</p> <p>25 MS. PARFITT: Objection to form.</p>
<p style="text-align: right;">Page 191</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Elsewhere in your report, you do complain</p> <p>3 about lack of follow-up in the cohort studies, don't</p> <p>4 you?</p> <p>5 A. I do mention that as one of the limitations,</p> <p>6 yes.</p> <p>7 Q. And you specifically discuss the NHS cohort</p> <p>8 as having a period of -- I believe you say it's</p> <p>9 14 years; is that right?</p> <p>10 A. From -- yeah. I -- I can't remember</p> <p>11 specifically. It's from the 1980s to -- I don't</p> <p>12 remember the exact date of the last -- the last date</p> <p>13 of follow-up in their papers.</p> <p>14 Q. And, again, that's the exposure period that</p> <p>15 Penninkilampi is looking at as well; correct?</p> <p>16 Or excuse me, not the exposure period, the</p> <p>17 period of time that they follow the study</p> <p>18 participants; correct?</p> <p>19 Penninkilampi is looking at from</p> <p>20 questionnaire to 2000; correct?</p> <p>21 A. Correct.</p> <p>22 Q. Okay. And when you say in your report that</p> <p>23 the NHS study has a 14-year follow-up period, that's</p> <p>24 what you're looking at too, as well; correct?</p> <p>25 A. Right. From the time of exposures --</p>	<p style="text-align: right;">Page 193</p> <p>1 THE WITNESS: "Washed out," I don't</p> <p>2 like that term. But again, I fully acknowledge that</p> <p>3 the later study showed weaker associations, yes.</p> <p>4 BY MR. JAMES:</p> <p>5 Q. And the association for serous invasive</p> <p>6 ovarian cancer in the Gates 2010 paper was not</p> <p>7 statistically significant; correct?</p> <p>8 A. I believe that is correct.</p> <p>9 Q. So when you include the critique in your</p> <p>10 report about the follow-up being a 14-year period, you</p> <p>11 also, like Penninkilampi, aren't crediting the</p> <p>12 additional ten years of follow-up that the Gates paper</p> <p>13 published on; correct?</p> <p>14 MS. PARFITT: Objection to form.</p> <p>15 THE WITNESS: "Aren't crediting the</p> <p>16 additional ten years of follow-up."</p> <p>17 You know, as I have stated before, when</p> <p>18 people do meta-analyses, they will make decisions</p> <p>19 about which studies to include. I acknowledge that</p> <p>20 Penninkilampi didn't describe in detail why they went</p> <p>21 with the Gertig rather than a later study.</p> <p>22 My understanding, however, is that other</p> <p>23 people -- other meta-analyses have looked at -- have</p> <p>24 included the later study, and the overall conclusions</p> <p>25 were not changed in any real way.</p>

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<p style="text-align: right;">Page 194</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Well, Penninkilampi, you say, didn't describe</p> <p>3 in detail about why they went with the earlier study,</p> <p>4 but, in truth, they didn't describe it at all.</p> <p>5 MS. PARFITT: Objection.</p> <p>6 THE WITNESS: That's -- that's correct.</p> <p>7 BY MR. JAMES:</p> <p>8 Q. And when you refer to other studies that</p> <p>9 have, in fact, looked at the Gates 2010 cohort data</p> <p>10 that provides a longer period of follow-up, those</p> <p>11 papers have necessarily noted that the serous</p> <p>12 relationship found in Gertig 2000 disappeared in 2010;</p> <p>13 correct?</p> <p>14 MS. PARFITT: Objection. Form.</p> <p>15 THE WITNESS: Can you -- can we -- tell</p> <p>16 me which -- specifically which article you're --</p> <p>17 BY MR. JAMES:</p> <p>18 Q. Sure. Let's turn to the Berge article.</p> <p>19 A. Okay.</p> <p>20 Q. The Berge article was marked as</p> <p>21 Exhibit No. 21. And you have it before you, Doctor?</p> <p>22 A. I do.</p> <p>23 Q. Okay. And if you turn to Figure 2, which is</p> <p>24 on page 254, do you see that there that in the forest</p> <p>25 plot, they have listed the cohort studies at the</p>	<p style="text-align: right;">Page 196</p> <p>1 BY MR. JAMES:</p> <p>2 Q. They're heterogeneous. Did I pronounce that</p> <p>3 correctly?</p> <p>4 A. No. Heterogeneous.</p> <p>5 Q. Heterogeneous. Thank you. I figured I got</p> <p>6 that wrong.</p> <p>7 So what they're saying there is that the</p> <p>8 results by the study design are different; right?</p> <p>9 A. That's -- yes, that's what they are saying.</p> <p>10 Q. And here we see, again, that this study used</p> <p>11 the more recent data; correct?</p> <p>12 MS. PARFITT: Objection. Form.</p> <p>13 THE WITNESS: It used the more recent</p> <p>14 publication from the Nurses' Health Study, yes.</p> <p>15 BY MR. JAMES:</p> <p>16 Q. Which includes the more recent data; correct?</p> <p>17 MS. PARFITT: Objection.</p> <p>18 THE WITNESS: Yes.</p> <p>19 BY MR. JAMES:</p> <p>20 Q. On page 8 of your report, Dr. Moorman, you</p> <p>21 say at the bottom paragraph (as read):</p> <p>22 "Cohort studies and case-control</p> <p>23 studies each have advantages and</p> <p>24 disadvantages for assessing talc</p> <p>25 as a risk factor for ovarian</p>
<p style="text-align: right;">Page 195</p> <p>1 bottom; correct?</p> <p>2 A. Correct.</p> <p>3 Q. Okay. And there they report data from the</p> <p>4 Gates 2010 study; correct?</p> <p>5 A. Correct.</p> <p>6 Q. Okay. They do not report the data from the</p> <p>7 Gertig 2000 paper; correct?</p> <p>8 A. That is correct.</p> <p>9 Q. And if you look at the conclusions of the</p> <p>10 Berge authors -- and we talked about this before --</p> <p>11 but if you look at the abstract of the paper,</p> <p>12 Dr. Moorman, the authors say (as read):</p> <p>13 "The heterogeneity of results by</p> <p>14 study design, however, detracts</p> <p>15 from a causal interpretation of</p> <p>16 this association."</p> <p>17 Do you see that?</p> <p>18 A. Yes. You've asked that before. Yes.</p> <p>19 Q. And what the authors there are saying is that</p> <p>20 the results from the case-control studies, the</p> <p>21 meta-analyses of the case-control studies, and the</p> <p>22 results of the meta-analyses of the cohort studies are</p> <p>23 different; right?</p> <p>24 MS. PARFITT: Objection.</p> <p>25 THE WITNESS: They -- yes.</p>	<p style="text-align: right;">Page 197</p> <p>1 cancer, and one study design is</p> <p>2 not clearly superior to the</p> <p>3 other."</p> <p>4 Do you see where I was reading that?</p> <p>5 A. Yes, I do.</p> <p>6 Q. So your expert opinion in this case is that</p> <p>7 the cohort studies on talc ovarian cancer and the</p> <p>8 case-control studies on talc ovarian cancer are on</p> <p>9 equal footing?</p> <p>10 A. I think -- again, using terminology like</p> <p>11 "equal footing," it's -- I wouldn't really describe it</p> <p>12 like that.</p> <p>13 I think that case-control studies and cohort</p> <p>14 studies are both well-established, well-accepted</p> <p>15 methods for studying cancer epidemiology. There are</p> <p>16 strengths and weaknesses to each design, as I have</p> <p>17 indicated here. And some of them very -- some of the</p> <p>18 strengths and weaknesses are very specific to this</p> <p>19 exposure and outcome.</p> <p>20 Q. Doesn't the body of talc ovarian cancer</p> <p>21 literature that you've looked at for your MDL opinions</p> <p>22 emphasize the importance of cohort data on the issue?</p> <p>23 MS. PARFITT: Objection. Form.</p> <p>24 THE WITNESS: I considered all of the</p> <p>25 epidemiologic data; and when we look at the body of</p>

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<p style="text-align: right;">Page 198</p> <p>1 literature, more of the literature comes from 2 case-control studies than from cohort studies. So all 3 of the data are important. There just happen to be 4 more case-control studies than cohort studies. 5 BY MR. JAMES: 6 Q. But your testimony is that the cohorts are 7 not superior to the case-controls, and the 8 case-controls are not superior to the cohorts; 9 correct? 10 A. As I describe in my report -- the same page, 11 I say (as read): 12 "Rather than making a judgment 13 based only on the overall study 14 design, the evaluation and 15 interpretation of the findings of 16 the studies must consider the 17 strengths and weaknesses of the 18 individual studies." 19 And I think that I did consider that. 20 I considered strengths and weaknesses of the cohort 21 studies. I considered strengths and weaknesses of the 22 case-control studies. 23 Q. And you're not claiming that the study design 24 of these studies -- the cohort versus the 25 case-control -- one is superior to the other? You're</p>	<p style="text-align: right;">Page 200</p> <p>1 And it's the number of cases rather than the overall 2 size of the cohort that contributes to the statistical 3 power. And that doesn't address all the other 4 problems with that study. 5 But sometimes people will mistakenly say 6 these large studies -- you know, this large study, 7 40,000 people, and they didn't find an association. 8 But they're not looking into all the limitations of 9 that particular study. 10 BY MR. JAMES: 11 Q. Okay, Dr. Moorman, I'm going to object to the 12 nonresponsive nature of your answer. 13 A. I -- I think that I was responsive, but 14 please ask your question again. 15 Q. Okay. So the question that I asked you is 16 whether you are aware that the body of literature that 17 you've looked at has generally emphasized the 18 importance of cohort data on this topic. The answer 19 is yes or the answer is no. 20 MS. PARFITT: The answer is -- first, 21 I object to the question. And the witness has 22 answered the question several times. Your time. 23 You're on your clock. 24 BY MR. JAMES: 25 Q. Are you aware that the body of literature has</p>
<p style="text-align: right;">Page 199</p> <p>1 not claiming that? 2 MS. PARFITT: Objection. Asked and 3 answered several times. 4 THE WITNESS: Right. I -- again, 5 I think that I have answered that, that they -- the 6 study designs are both well-accepted study designs; 7 they have advantages and disadvantages; and so you 8 have to look at some of the specific characteristics 9 of the individual studies. 10 BY MR. JAMES: 11 Q. And so the body of talc literature that 12 you've looked at, whether it be cohort studies, 13 meta-analyses, case-control studies, are you aware 14 that that body of literature has generally emphasized 15 the importance of cohort data on this topic? 16 MS. PARFITT: Objection. Misstates the 17 record -- scientific record. 18 THE WITNESS: I am aware -- I have read 19 some studies that mistakenly say that the cohort 20 studies, because they involve 40,000 or 60,000 people, 21 that they provide more of the evidence than all the 22 case-control studies, which are generally smaller. 23 However, just, again, to take the example of 24 the Gonzalez sisters study, that's a cohort with 25 40,000 people in it, but there were only 154 cases.</p>	<p style="text-align: right;">Page 201</p> <p>1 emphasized the importance of cohort data? Are you 2 aware of that? Yes or no? 3 MS. PARFITT: Objection. 4 THE WITNESS: I -- I disagree that -- 5 your characterization of it. 6 BY MR. JAMES: 7 Q. Then, the answer is no. 8 A. No. You asked am I aware -- 9 Q. The answer is yes or it's no, Dr. Moorman. 10 I have limited time to ask questions today. 11 Were you aware -- are you aware that the 12 body of literature on talc and ovarian cancer has 13 emphasized the importance of cohort data on this 14 topic? 15 MS. PARFITT: Objection. Form. 16 THE WITNESS: I don't think -- 17 MS. PARFITT: Asked and answered. 18 THE WITNESS: -- the statement is true. 19 I think that the -- 20 BY MR. JAMES: 21 Q. So then the answer is no. 22 MS. PARFITT: Stop. Let her answer. 23 THE WITNESS: No. You're asking me if 24 I'm aware -- 25 MS. PARFITT: Why do you ask her the</p>

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<p style="text-align: right;">Page 202</p> <p>1 same question?</p> <p>2 THE WITNESS: -- that this has</p> <p>3 emphasized that. And I don't think that is it at all.</p> <p>4 I think that the body of literature</p> <p>5 emphasizes again and again and again that of the</p> <p>6 roughly 25 to 30 studies, only three of them are</p> <p>7 cohort studies.</p> <p>8 It's part of the data on the topic, but it's</p> <p>9 just part of it. So to say that it has emphasized the</p> <p>10 importance of cohort data, I don't agree with that</p> <p>11 statement.</p> <p>12 BY MR. JAMES:</p> <p>13 Q. I marked the Houghton WHI study as</p> <p>14 Exhibit No. 25, and I'm going to hand you two copies.</p> <p>15 (Exhibit No. 25 was marked for identification.)</p> <p>16 THE WITNESS: Thank you.</p> <p>17 BY MR. JAMES:</p> <p>18 Q. All right. Dr. Moorman, you see here in the</p> <p>19 abstract, the "Background" section of the paper, the</p> <p>20 authors of the WHI study in 2014 say that (as read):</p> <p>21 "The purpose of this analysis was</p> <p>22 to assess perineal powder use and</p> <p>23 risk of ovarian cancer</p> <p>24 prospectively."</p> <p>25 Correct?</p>	<p style="text-align: right;">Page 204</p> <p>1 exposure."</p> <p>2 Do you see where I read that?</p> <p>3 A. I do.</p> <p>4 Q. Okay. Again, do you agree with that</p> <p>5 statement as a general proposition?</p> <p>6 A. I would like to point out there are --</p> <p>7 potential reason, a potential for an overestimation.</p> <p>8 And in my own report, I acknowledge the potential for</p> <p>9 recall bias, and I go back to explain why I don't</p> <p>10 think that recall bias is a full explanation for this</p> <p>11 association.</p> <p>12 Q. Nevertheless, you will agree with me that the</p> <p>13 authors of this paper are acknowledging the importance</p> <p>14 of cohort data? Agree?</p> <p>15 MS. PARFITT: Objection.</p> <p>16 THE WITNESS: As you would expect the</p> <p>17 investigators on a cohort study to do.</p> <p>18 BY MR. JAMES:</p> <p>19 Q. And the answer was yes --</p> <p>20 A. Yes.</p> <p>21 Q. -- comma, as you would expect?</p> <p>22 MS. PARFITT: Objection.</p> <p>23 THE WITNESS: Yes.</p> <p>24 MR. JAMES: I'm going to mark as the</p> <p>25 next exhibit the Gertig 2000 paper, which is</p>
<p style="text-align: right;">Page 203</p> <p>1 A. That is what it says, yes.</p> <p>2 Q. Okay. And if we look towards page 5, we see,</p> <p>3 at the top of the left-hand column, the authors there</p> <p>4 emphasize (as read):</p> <p>5 "The prospective nature of our</p> <p>6 study would eliminate the</p> <p>7 potential for recall bias."</p> <p>8 Do you see that?</p> <p>9 A. I do see that.</p> <p>10 Q. Do you agree with that general proposition?</p> <p>11 "Yes" or "no"?</p> <p>12 A. It eliminates the potential for recall bias.</p> <p>13 It does not eliminate the potential for inaccurate</p> <p>14 recall.</p> <p>15 Q. And if you look at page 4, it's the preceding</p> <p>16 set of sentences, the authors note -- quote -- at the</p> <p>17 bottom of the right column (as read):</p> <p>18 "One potential reason that</p> <p>19 case-control studies have found</p> <p>20 slight increases in risk is the</p> <p>21 potential for an overestimation of</p> <p>22 the true association due to recall</p> <p>23 bias, because the participants are</p> <p>24 aware of their ovarian cancer</p> <p>25 status when reporting powder</p>	<p style="text-align: right;">Page 205</p> <p>1 Exhibit No. 26.</p> <p>2 (Exhibit No. 26 was marked for identification.)</p> <p>3 BY MR. JAMES:</p> <p>4 Q. Again, this is the NHS 2000 paper; correct?</p> <p>5 A. That is correct.</p> <p>6 Q. And we see that in the abstract of this</p> <p>7 cohort paper, the authors state at the -- well, it's</p> <p>8 not in the abstract -- it's right above the "Methods"</p> <p>9 section, the authors state (as read):</p> <p>10 "Despite the relative consistency</p> <p>11 among studies, the limited</p> <p>12 supporting biologic evidence,</p> <p>13 together with the possibility of</p> <p>14 recall and selection bias in</p> <p>15 case-control studies, has raised</p> <p>16 questions about the plausibility</p> <p>17 of the association. We,</p> <p>18 therefore, prospectively examined</p> <p>19 the relationship between perineal</p> <p>20 talc use and ovarian cancer risk</p> <p>21 in a large cohort of US women."</p> <p>22 Do you see where I read that?</p> <p>23 A. Yes, I do.</p> <p>24 Q. And again, methodologically, the authors of</p> <p>25 this cohort paper are emphasizing the importance of</p>

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<p style="text-align: right;">Page 206</p> <p>1 cohort data on the topic; correct?</p> <p>2 MS. PARFITT: Objection.</p> <p>3 THE WITNESS: Yes. Again, they</p> <p>4 emphasize the importance of doing it prospectively, as</p> <p>5 you would expect the investigators on a cohort study</p> <p>6 to do.</p> <p>7 BY MR. JAMES:</p> <p>8 Q. Do you think that's just because there's some</p> <p>9 sort of subjective bias the authors of that cohort</p> <p>10 paper have towards cohorts? Do you think that's just</p> <p>11 their personal opinion?</p> <p>12 MS. PARFITT: Objection.</p> <p>13 THE WITNESS: I have no way of knowing</p> <p>14 what their opinion is.</p> <p>15 BY MR. JAMES:</p> <p>16 Q. A number of the meta-analyses that we've</p> <p>17 looked at today and that you looked at to inform your</p> <p>18 report have also talked about the benefits of cohort</p> <p>19 data. And I've asked that question before, and that's</p> <p>20 where we -- that's where we sort of ran into issues,</p> <p>21 so I'll just strike that question.</p> <p>22 If you can turn to -- back to the</p> <p>23 Penninkilampi study. And the Penninkilampi study is</p> <p>24 the recent meta-analysis that you cited 14 times in</p> <p>25 your report; correct?</p>	<p style="text-align: right;">Page 208</p> <p>1 again stressing the desire for cohort data on this</p> <p>2 topic; correct?</p> <p>3 MS. PARFITT: Objection. Misstates the</p> <p>4 evidence.</p> <p>5 THE WITNESS: When -- if we were to</p> <p>6 look at a cohort study where women were enrolled in</p> <p>7 the study early in their life when they started using</p> <p>8 talc and they were followed throughout their life and</p> <p>9 exposure information was updated throughout the period</p> <p>10 of follow-up and you followed them for 50 years, that</p> <p>11 would be a wonderful way -- a stronger design than to</p> <p>12 do a case-control study. So I could not disagree with</p> <p>13 that.</p> <p>14 But we're being asked to make a judgment on</p> <p>15 the data that we have here -- here and now, not</p> <p>16 something that's decades away.</p> <p>17 BY MR. JAMES:</p> <p>18 Q. Do you agree that case-control studies are</p> <p>19 low-level evidence?</p> <p>20 A. No, I do not agree with that.</p> <p>21 Q. Do you know that the Penninkilampi authors</p> <p>22 referred to case-control studies as low-level</p> <p>23 evidence?</p> <p>24 A. I see that in their paper.</p> <p>25 Q. Do you --</p>
<p style="text-align: right;">Page 207</p> <p>1 MS. PARFITT: Objection. Form.</p> <p>2 THE WITNESS: As stated below -- or</p> <p>3 stated above, I have cited it. I don't know how many</p> <p>4 times.</p> <p>5 BY MR. JAMES:</p> <p>6 Q. And meta-analyses also are what you refer to</p> <p>7 in your report as some of the strongest evidence;</p> <p>8 correct?</p> <p>9 A. Yes, that is correct.</p> <p>10 Q. Okay. And so the authors of this</p> <p>11 meta-analysis, on page 47 in the conclusion section,</p> <p>12 which we have looked at already, again note that</p> <p>13 case-control studies are "prone to recall bias";</p> <p>14 right?</p> <p>15 A. That's what it says, yes.</p> <p>16 Q. Okay. And then if you continue on past the</p> <p>17 section that we've already read -- and actually, it</p> <p>18 begins at the bottom of page 47 and carries to 48 --</p> <p>19 but the authors state (as read):</p> <p>20 "Additional epidemiologic evidence</p> <p>21 from prospective studies with</p> <p>22 attention to effects within</p> <p>23 ovarian cancer subtype is</p> <p>24 warranted."</p> <p>25 So here the authors of Penninkilampi are</p>	<p style="text-align: right;">Page 209</p> <p>1 A. I --</p> <p>2 Q. I'm sorry.</p> <p>3 A. I will disagree with that. It's -- just</p> <p>4 using the example of my own study, the AACES study.</p> <p>5 Of all the studies that have looked at talc and</p> <p>6 ovarian cancer, I believe that one is the one that has</p> <p>7 been most recently funded. So about 2009, 2010. It's</p> <p>8 quite an expensive study, and I can't imagine that the</p> <p>9 National Cancer Institute would have invested that</p> <p>10 much money in the study if they thought that we were</p> <p>11 only going to get low-level evidence.</p> <p>12 MS. PARFITT: Scott, we've been going</p> <p>13 about an hour and ten.</p> <p>14 You may want to keep going? Just let me</p> <p>15 know.</p> <p>16 THE WITNESS: I could use a break.</p> <p>17 MR. JAMES: May I finish this line? Is</p> <p>18 that okay with you?</p> <p>19 THE WITNESS: Yes.</p> <p>20 MR. JAMES: Everyone?</p> <p>21 MS. PARFITT: Sure.</p> <p>22 BY MR. JAMES:</p> <p>23 Q. Dr. Moorman, if you can turn with me to the</p> <p>24 Langseth study. It's Exhibit 22. And this will be</p> <p>25 the last series of questions, and then we'll take our</p>



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<p>1 break.</p> <p>2 A. Langseth -- okay. The exhibit number is</p> <p>3 incorrect.</p> <p>4 Q. Oh, you're right. And I'm going to fix that</p> <p>5 at break. Thank you.</p> <p>6 A. Okay.</p> <p>7 Q. If you turn with me to page -- well, you</p> <p>8 don't have to turn. It's page 358. It's the first</p> <p>9 page of the article. And, again, Langseth is one of</p> <p>10 the meta-analyses upon which you rely; correct?</p> <p>11 A. Correct.</p> <p>12 Q. And the meta-analyses authors here say, in</p> <p>13 the left-hand column at the bottom, the second</p> <p>14 sentence of the bottom paragraph, they say (as read):</p> <p>15 "In the cohort study, arguably the</p> <p>16 strongest study because of its</p> <p>17 partly prospective ascertainment</p> <p>18 of exposure, there was no</p> <p>19 association between cosmetic talc</p> <p>20 use and risk of all subtypes of</p> <p>21 ovarian cancer combined."</p> <p>22 Do you see that?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. You agree with the Langseth authors</p> <p>25 that the cohort study is arguably the strongest study</p>	<p>1 Q. And you cite Narod for your comments about</p> <p>2 power in the cohorts; correct?</p> <p>3 A. Yes.</p> <p>4 Q. Have you analyzed the calculations performed</p> <p>5 by Narod? Have you separately analyzed his</p> <p>6 calculations?</p> <p>7 A. No, I did not.</p> <p>8 Q. Have you considered any other commentaries or</p> <p>9 articles looking at the issue of power in the cohort</p> <p>10 studies in the talc ovarian cancer literature?</p> <p>11 A. I -- I'm trying to remember specifically. It</p> <p>12 seems like the Sister Study might have mentioned power</p> <p>13 as a limitation of their study because of the number</p> <p>14 of cases.</p> <p>15 Q. Did you consider -- let me just hand this to</p> <p>16 you. We already have it marked. It's the Berge</p> <p>17 article, which is Exhibit 21.</p> <p>18 A. Okay.</p> <p>19 Q. And I'm turning to page 253. And at the</p> <p>20 far -- the right column, top paragraph, and halfway</p> <p>21 down through that paragraph, the authors state</p> <p>22 (as read):</p> <p>23 "It should be noted that the</p> <p>24 cohort studies included in the</p> <p>25 meta-analyses comprised a total of</p>
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<p>1 because of its prospective nature?</p> <p>2 A. I really can't say that I agree with that,</p> <p>3 because the prospective aspect of it is certainly a</p> <p>4 positive for the study, but the way they did exposure</p> <p>5 assessment kind of weakened the study.</p> <p>6 So I think that there were some very well</p> <p>7 done case-control studies, so I wouldn't necessarily</p> <p>8 say this was the strongest study.</p> <p>9 MR. JAMES: And now is a good time for</p> <p>10 the break.</p> <p>11 THE WITNESS: Okay.</p> <p>12 MR. JAMES: Thank you.</p> <p>13 THE VIDEOGRAPHER: Going off record at</p> <p>14 3:02 p.m.</p> <p>15 (Recess taken from 3:02 p.m. to 3:16 p.m.)</p> <p>16 THE VIDEOGRAPHER: Back on record at</p> <p>17 3:16 p.m.</p> <p>18 BY MR. JAMES:</p> <p>19 Q. Dr. Moorman, on page 25 of your report, you</p> <p>20 make a comment about power and the cohort studies;</p> <p>21 correct?</p> <p>22 A. Can you --</p> <p>23 Q. It's the bottom of first paragraph, where you</p> <p>24 cite the Narod article.</p> <p>25 A. Yes.</p>	<p>1 429 cases of ovarian cancer</p> <p>2 exposed to genital talc and 943</p> <p>3 unexposed cases. The statistical</p> <p>4 power of the meta-analysis of</p> <p>5 these cohort studies to detect a</p> <p>6 relative risk of 1.25, similar to</p> <p>7 the result of meta-analyses of</p> <p>8 case-control studies, was .99.</p> <p>9 Thus low power of cohort studies</p> <p>10 cannot be invoked as an</p> <p>11 explanation of the heterogeneity</p> <p>12 of results."</p> <p>13 You see where I was reading?</p> <p>14 A. I do.</p> <p>15 Q. Have you considered this portion of the Berge</p> <p>16 article before?</p> <p>17 A. I have looked at this article, and I have</p> <p>18 considered all aspects of it, as I did all of the</p> <p>19 other meta-analyses and articles.</p> <p>20 Q. You did not cite the Berge article with</p> <p>21 regard to the issue of power in your report; correct?</p> <p>22 MS. PARFITT: Objection. Form.</p> <p>23 THE WITNESS: No, I -- I did not.</p> <p>24 BY MR. JAMES:</p> <p>25 Q. Okay. And why is that?</p>

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<p style="text-align: right;">Page 214</p> <p>1 A. I can't cite any specific reason.</p> <p>2 Q. Is that because this conflicts with your</p> <p>3 litigation opinion on power?</p> <p>4 MS. PARFITT: Objection. Form.</p> <p>5 THE WITNESS: No. I -- I don't -- that</p> <p>6 was not my reason, no.</p> <p>7 BY MR. JAMES:</p> <p>8 Q. Do you have any reason to disagree with the</p> <p>9 power analysis set forth in the Berge paper?</p> <p>10 A. I -- I don't have a reason to disagree with</p> <p>11 the power issue, but I think that it's only one part</p> <p>12 of the picture, that there are other factors that</p> <p>13 could contribute to differences in the findings</p> <p>14 between the cohort studies and the case-control</p> <p>15 studies.</p> <p>16 Q. With respect to this precise power</p> <p>17 calculation in the Berge paper, do you have any</p> <p>18 criticisms of this power calculation?</p> <p>19 A. They do not provide much detail on how they</p> <p>20 calculated it, so there's really -- I can't say if</p> <p>21 they did it correctly or not. But I -- I just can't</p> <p>22 comment on it. It's just a single sentence there.</p> <p>23 Q. Similar to the Narod sentence that you</p> <p>24 reviewed?</p> <p>25 A. I --</p>	<p style="text-align: right;">Page 216</p> <p>1 but with respect to the issue of follow-up -- it's the</p> <p>2 paragraph above the Narod comment.</p> <p>3 Do you see where I am?</p> <p>4 A. Yes.</p> <p>5 Q. Okay. And there, we talk about -- excuse me.</p> <p>6 There, you talk about the follow-up for the cohort</p> <p>7 studies; correct?</p> <p>8 A. Yes.</p> <p>9 Q. Okay. And with respect to the NHS follow-up,</p> <p>10 there is where you report 14 years of follow-up;</p> <p>11 right?</p> <p>12 A. Correct.</p> <p>13 Q. And as we discussed earlier today, that does</p> <p>14 not account for the additional ten years of data as</p> <p>15 reflected by the Gates 2010 paper; correct?</p> <p>16 A. What I am referring here, I'm describing the</p> <p>17 three cohort studies in the most recent meta-analyses</p> <p>18 and what they reported in that meta-analysis --</p> <p>19 Q. Understood.</p> <p>20 A. Okay.</p> <p>21 Q. So you're referring there to the</p> <p>22 Penninkilampi meta-analysis; correct?</p> <p>23 A. I believe that is the case. Let me check the</p> <p>24 reference. Yes.</p> <p>25 Q. So Penninkilampi reports the 14 years of</p>
<p style="text-align: right;">Page 215</p> <p>1 Q. Let me rephrase it if it helps.</p> <p>2 Did you separately assess the Berge --</p> <p>3 excuse me -- the power calculation in either the Narod</p> <p>4 article or the Berge article?</p> <p>5 A. If I may go back to my report for just a</p> <p>6 moment.</p> <p>7 Q. Sure.</p> <p>8 A. I think that this statement that I have</p> <p>9 here -- I'm -- I think my intent in my report was</p> <p>10 indicating that the lack of statistical significance</p> <p>11 in the individual studies was a power concern.</p> <p>12 Berge was talking about the statistical</p> <p>13 power for the combined studies. So I think that there</p> <p>14 is some distinction there between what I'm referring</p> <p>15 to individual studies versus what Berge is describing</p> <p>16 as the power of the combined analysis.</p> <p>17 Q. Well, Berge is saying that the low power of</p> <p>18 cohort studies cannot be invoked as an explanation for</p> <p>19 the heterogeneity of results.</p> <p>20 Do you agree or disagree with that</p> <p>21 statement?</p> <p>22 A. When they are combining them, I -- I don't</p> <p>23 disagree with that. I think there are other reasons</p> <p>24 that can explain the heterogeneity.</p> <p>25 Q. On page 25, we've touched upon this already,</p>	<p style="text-align: right;">Page 217</p> <p>1 follow-up; correct?</p> <p>2 A. I believe so.</p> <p>3 Q. And we know that the Penninkilampi paper did</p> <p>4 not include the additional 10 years of follow-up as</p> <p>5 reflected by the Gates 2010 paper; correct?</p> <p>6 A. Yes. We have already -- you've already asked</p> <p>7 and I've already answered that.</p> <p>8 Q. And then the next one you discuss is the WHI</p> <p>9 study where you are reporting Penninkilampi's</p> <p>10 reporting of 12.4 years of follow-up; correct?</p> <p>11 A. That is correct.</p> <p>12 Q. And do you know that the follow-up period in</p> <p>13 the WHI -- do you know that the WHI asked about</p> <p>14 duration of talc use?</p> <p>15 A. May I go back to that study?</p> <p>16 Q. Sure.</p> <p>17 A. Do you --</p> <p>18 Q. It's 25.</p> <p>19 A. Yes, they describe in their exposure</p> <p>20 assessment, that they did ask about duration of use</p> <p>21 using five categories from less than a year all the</p> <p>22 way up to 20 or more years.</p> <p>23 Q. And so we know that they -- they followed the</p> <p>24 study participants for, according to Penninkilampi,</p> <p>25 12.4 years. But, in addition to that, they also asked</p>

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<p>1 about the -- study participants about their prior 2 duration of usage; correct? 3 A. They asked about that, but I think that one 4 has to consider some of the caveats that go along with 5 that. These -- may I continue? 6 These women, they report that they were, on 7 average, 63 years of age when they -- at baseline, so 8 at the start of enrollment in the cohort. So they 9 were asking them to recall an exposure that went back, 10 for many women, that probably started in their teens 11 or twenties. So there was certainly the possibilities 12 of some inaccurate recall because they were asking 13 them to recall an exposure that went back quite a few 14 years. 15 Another consideration with this study is 16 they excluded roughly -- let's see -- the cohort 17 was -- they started off with 90-some-thousand women in 18 the cohort, and they excluded any history of any women 19 with cancer at baseline, which is appropriate to do, 20 but the potential concern about that is, if there were 21 talc users who had developed ovarian -- or had 22 developed ovarian cancer before the follow-up began, 23 that would never be captured. 24 MR. JAMES: Okay. Dr. Moorman, just 25 very respectfully, I'm going to have to object to the</p>	<p>1 excuse me -- page 26, you discuss updating exposure 2 information in the cohort studies. 3 A. Yes. 4 Q. Do you have any basis to dispute the accuracy 5 of the reported talc use at the time it was initially 6 ascertained in the cohort studies? 7 A. The accuracy of the reported talc use at the 8 time that they started follow-up in the cohorts. 9 Q. Correct. 10 A. I believe that, when you are asking people to 11 recall exposures that occurred over a long period of 12 time, there will be some inadvertent inaccuracies. 13 Q. And are you saying with respect to questions 14 about duration? 15 A. It could be with ever use or with duration. 16 Some women who used it might have forgotten and never 17 reported it. So that's just kind of an inherent 18 problem anytime you ask someone to recall exposures, 19 particularly if they might have occurred decades ago. 20 Q. Is that true for the case-control studies as 21 well? 22 A. Yes. In my report, I indicate that -- I make 23 the distinction between recall bias and inaccurate 24 recall and indicate that inaccurate recall -- 25 specifically on page 21, make the distinction between</p>
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<p>1 nonresponsive portion of the answer. 2 BY MR. JAMES: 3 Q. So the question that I asked is not the 4 question that you ended up answering. 5 A. I did answer your question, I believe. 6 Q. Okay. I didn't ask you for your critiques of 7 the WHI. I asked you about the follow-up issue. 8 Okay? Do we need to look at the question again? 9 I asked -- my question is: 10 "Question: But in addition to that, 11 they also asked about -- the study 12 participants about their prior 13 duration of usage; correct?" 14 A. And I answered it but thought that there were 15 important relevant considerations. 16 MR. JAMES: Can we go off the record 17 for a second -- 18 MS. PARFITT: Yes. 19 MR. JAMES: -- please? 20 THE VIDEOGRAPHER: Off record at 3:29. 21 (Discussion off the record.) 22 THE VIDEOGRAPHER: Back on record at 23 3:31 p.m. 24 BY MR. JAMES: 25 Q. On page 25 of your report, Dr. Moorman --</p>	<p>1 recall bias and inaccurate recall that is difficult -- 2 inaccurate recall and exposure that is difficult to 3 remember with precision. 4 And that's an issue with any type of study 5 when you're asking people to recall past exposures. 6 Q. And transitioning to the topic that you 7 brought up, which is the recall bias. We can stay on 8 page 216 your report. 9 A. Yes. 10 Q. And there, you address -- at the bottom 11 paragraph, you say that (as read): 12 "Recall bias, which theoretically 13 could result in the bias estimate 14 of the relative risk, must be 15 considered." 16 Do you see where I am? 17 A. I do. 18 Q. And you cite three situations where recall 19 bias would be a "particular threat" to a study's 20 validity; right? 21 A. Yes. 22 Q. And with -- let's walk through those three 23 together. 24 The first is -- the first threat that you 25 identify is "if the exposure of interest is one that</p>

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<p style="text-align: right;">Page 222</p> <p>1 could be considered sensitive"; right?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. And then you address that reason in</p> <p>4 turn on the next page, on page 22 of your report?</p> <p>5 A. Yes.</p> <p>6 Q. And you state there that (as read):</p> <p>7 "In regard to the situation,</p> <p>8 genital talc use would 'not be</p> <p>9 considered a particularly</p> <p>10 sensitive topic."</p> <p>11 Right?</p> <p>12 A. That's what I state in my report, yes.</p> <p>13 Q. Okay. And what basis do you have for that</p> <p>14 statement? Do you cite to anything? Have you</p> <p>15 conducted any studies to support that statement? What</p> <p>16 scientific basis do you have for that statement?</p> <p>17 A. This is based on my professional judgment,</p> <p>18 based on years and years of doing studies where we</p> <p>19 collect data, getting feedback from interviewers. In</p> <p>20 our studies, we ask about a lot of personal things,</p> <p>21 you know, their menstrual history, their contraceptive</p> <p>22 history, those kind of things.</p> <p>23 And I have never gotten the impression that</p> <p>24 these were things that women considered sensitive and</p> <p>25 did not want to reveal, whereas when you get into</p>	<p style="text-align: right;">Page 224</p> <p>1 them, or any reason why a woman, if she's telling you</p> <p>2 her whole pregnancy and menstrual history, why she</p> <p>3 would feel embarrassed about her use of genital talc.</p> <p>4 Q. And do you have any empirical data to support</p> <p>5 that opinion?</p> <p>6 A. I am unaware of any empirical data that</p> <p>7 specifically addresses that.</p> <p>8 Q. Okay. The second situation you identify on</p> <p>9 page 21 and then discuss on page 22 is if -- is if the</p> <p>10 study hypotheses are known to the study subjects or</p> <p>11 interviewers.</p> <p>12 Do you see that?</p> <p>13 A. Yes.</p> <p>14 Q. Okay. And your analysis is on page 22.</p> <p>15 What did you do to evaluate this factor?</p> <p>16 A. Whether the study hypotheses are known to the</p> <p>17 study subjects or interviewers?</p> <p>18 Q. Correct. With respect to the talc ovarian</p> <p>19 cancer literature.</p> <p>20 A. Okay. Again, this is based on my experience</p> <p>21 in having done epidemiologic studies for many years.</p> <p>22 As I state here, it's standard practice in</p> <p>23 epidemiologic research where we're not discussing the</p> <p>24 hypotheses with the interviewers. We're asking a lot</p> <p>25 of questions. Some thought to increase risk; some</p>
<p style="text-align: right;">Page 223</p> <p>1 other topics, say -- like, I give the example of</p> <p>2 induced abortion, that, I have heard from some of our</p> <p>3 interviewers, that sometimes that evokes strong</p> <p>4 emotions in the women.</p> <p>5 And so I think that, you know, there are</p> <p>6 some exposures that are sensitive, as I describe, that</p> <p>7 women might be hesitant to report. And I contrast</p> <p>8 that with things that are personal but not</p> <p>9 particularly sensitive.</p> <p>10 When a woman has agreed to be in a study,</p> <p>11 she knows that we're going to be asking some of these</p> <p>12 questions. And I have never heard any comments from</p> <p>13 any of the interviewers in the many studies I've done</p> <p>14 that this was a question that women felt uncomfortable</p> <p>15 with.</p> <p>16 Q. Do you acknowledge the possibility that a</p> <p>17 person's use of a cosmetic talcum powder in their</p> <p>18 genital region could be viewed by some as a sensitive</p> <p>19 topic?</p> <p>20 A. I -- again, I -- I kind of make the</p> <p>21 distinction between something that is personal -- and</p> <p>22 we ask them a lot of personal questions, but it's --</p> <p>23 I don't see any aspect of that that would seem</p> <p>24 particularly sensitive, why someone might be</p> <p>25 embarrassed or feel that someone was going to judge</p>	<p style="text-align: right;">Page 225</p> <p>1 thought to decrease risk. It's standard that you</p> <p>2 would not really discuss the hypotheses with the</p> <p>3 interviewers.</p> <p>4 And, similarly, when we invite or ask women</p> <p>5 to be in our studies, we will tell them that, you</p> <p>6 know, it is a study of ovarian cancer, but we're not</p> <p>7 telling them which factors we think might be</p> <p>8 associated with increased risk and which ones might be</p> <p>9 associated with decreased risk.</p> <p>10 Q. To support this statement, did you conduct</p> <p>11 any post-interview interviews?</p> <p>12 A. Can you restate that? Tell me -- I'm not</p> <p>13 sure what you're asking.</p> <p>14 Q. So to determine if study hypotheses were</p> <p>15 known to the study subjects at the time that they were</p> <p>16 asked the questions, there would be methods or ways to</p> <p>17 which you could find that out; correct?</p> <p>18 A. We -- I'm thinking about it. I have never</p> <p>19 known that to be -- I've never known a study that has</p> <p>20 done that.</p> <p>21 In one breast cancer study, at the end of</p> <p>22 the interview, we asked the women if they had any</p> <p>23 ideas about what caused breast cancer. And, you know,</p> <p>24 we thought it might maybe raise some new ideas, but we</p> <p>25 found that it was largely -- we didn't see anything</p>

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<p style="text-align: right;">Page 226</p> <p>1 that was usable. I think that the most common 2 response was that women thought it was stress. So -- 3 Q. But you don't have any evidence of anything 4 similar being done in the talc ovarian cancer 5 literature; correct? 6 A. Not to my knowledge. 7 Q. At the bottom of page 22, and then carrying 8 over through 23, you cite to the Lanza study; correct? 9 A. That's correct. 10 Q. And you cite Lanza for the proposition 11 that -- to provide "further evidence that recall bias 12 in case-control studies does not inevitably lead to an 13 overestimate." 14 Do you see where I was reading? It's at the 15 bottom of 22. 16 A. Yes. Yes, I see where you're reading. 17 Q. Lanza did not pertain to talc and ovarian 18 cancer; correct? 19 A. As I state in my report, yes. It's looking 20 at a variety of meta-analyses that looked at both 21 case-control studies and cohort studies. And the 22 point of that paper was to determine if recall bias 23 seemed to lead to a consistently increased risk. And 24 their conclusion, as I state in here, there's no 25 significant difference in the effect estimates between</p>	<p style="text-align: right;">Page 228</p> <p>1 are that the estimates did not differ between 2 case-control and prospective or retrospective cohort 3 studies; correct? 4 A. Where are you reading, please? 5 Q. I'm in the "Results" section. 6 A. Okay. Yes. 7 Q. And then they say, "Heterogeneity was also 8 low," below that; right? 9 A. Yes. 10 Q. Again, if I'm understanding this paper 11 correctly, the situation for talc and ovarian cancer 12 is completely different, isn't it? Where we do have 13 heterogeneity between the prospective studies and the 14 retrospective case-control studies; right? 15 MS. PARFITT: Objection. Form. 16 THE WITNESS: We have one example in 17 the talc and the -- and the ovarian cancer -- in the 18 meta-analyses, they did note some heterogeneity 19 between the cohort studies and the case-control 20 studies. 21 I think that the point that I was trying to 22 get with that is in the observational studies, there's 23 always concern, as several of these people have -- as 24 several of the meta-analyses and other papers have 25 reported, that the stronger association due to --</p>
<p style="text-align: right;">Page 227</p> <p>1 the case-control and cohort studies, suggesting that 2 the study design didn't have an important impact on 3 the conclusions of the meta-analyses. 4 MR. JAMES: Okay. I marked Lanza as 5 Exhibit 27. I'll hand you two copies. 6 (Exhibit No. 27 was marked for identification.) 7 BY MR. JAMES: 8 Q. And so Lanza concerns therapeutic 9 interventions; correct? 10 A. Yes. 11 Q. And isn't -- and correct me if I'm wrong 12 here, but looking at Lanza, isn't what Lanza doing is 13 they're comparing the odds ratios reached in both the 14 case-control studies and in the prospective studies on 15 a completely different body of literature; right? 16 A. It is not dealing with talc and ovarian 17 cancer, if that is your question. 18 Q. And they're looking at whether the results of 19 the case-control studies on that separate body of 20 literature and the results of the prospective cohort 21 studies on that separate body of literature reached 22 different results; right? 23 A. Yes. 24 Q. Okay. And so the author's conclusions in the 25 abstract here are -- which you note in your report --</p>	<p style="text-align: right;">Page 229</p> <p>1 among the case-control studies was due to some kind of 2 recall bias. 3 So the point is, if it was recall bias, you 4 would expect to see that case-control studies always 5 had higher estimates than the cohort studies; and this 6 study is making the point that in this wide variety of 7 interventions that they looked at, that doesn't seem 8 to be the case at all. Okay. 9 BY MR. JAMES: 10 Q. So, again, this study is saying, "Look, the 11 results of case-control studies and the results of 12 prospective cohort studies on these therapeutic 13 interventions are similar, same ballpark, and so thus, 14 we can conclude that recall bias in this body of 15 literature must not be a big deal." 16 Is that a layman's fair way to describe the 17 results of this paper? 18 MS. PARFITT: Objection. Form. 19 THE WITNESS: Yeah. I -- I mean, 20 I think that it's one part of the -- I think that, 21 overall, that's a pretty fair summary of the point 22 that this paper is making. So... 23 BY MR. JAMES: 24 Q. And if you acknowledge that in the talc 25 ovarian cancer literature, there is a disparity</p>

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<p style="text-align: right;">Page 230</p> <p>1 between the retrospective case-control studies and the 2 prospective cohort studies, then Lanza isn't really 3 applicable at all, is it? 4 MS. PARFITT: Objection. 5 THE WITNESS: It is -- I think that it 6 is very applicable because it's trying to get at the 7 recall -- is recall bias -- is that a problem in 8 case-control studies that is going to inevitably lead 9 to higher risk estimates than what you would get in 10 cohort studies? 11 And as we have seen in these articles, we 12 see recall bias is frequently cited as a potential 13 reason that we saw stronger associations in 14 case-control studies than in cohort studies. 15 And I think this paper is really pointing 16 out that that's not inevitable, that you're always 17 going to have higher estimates with case-control 18 studies than cohort studies. 19 Specifically in relation to the 20 heterogeneity between the cohort studies and the 21 case-control studies in talc, I think that we have to 22 consider other biases that may be operating. 23 BY MR. JAMES: 24 Q. I mean, the justification for the Lanza 25 conclusions is that the results in the two study</p>	<p style="text-align: right;">Page 232</p> <p>1 Q. If you're looking at Lanza objectively, 2 doesn't it say exactly the opposite of what you're 3 saying here, Doctor? 4 I mean, again, the justification for Lanza 5 is the results are the same, and so recall bias isn't 6 a problem. But that justification doesn't exist in 7 the world of talc ovarian cancer. 8 That will be my last question on that. 9 A. No. I think that this addresses the recall 10 bias in the -- you know, I acknowledge it doesn't 11 directly address talc and ovarian cancer in this 12 paper; but it does address this -- this commonly-cited 13 thing that, you know, recall bias in case-control 14 studies could lead to higher risk estimates. And it's 15 saying that's not necessarily the case always. 16 Q. I promised that was my last question -- 17 A. Okay. 18 Q. -- so we'll move on. 19 The third factor that you discuss as a 20 particular threat for recall bias is if there is 21 considerable media attention. 22 Do you see where I've returned back to on 23 page 22? 24 21 is where you -- 21 through 22 is where 25 you lay out the three reasons. At the top of 22, you</p>
<p style="text-align: right;">Page 231</p> <p>1 designs are pretty much the same. So these two study 2 designs didn't reach different results. And so in 3 this body of literature, we don't really need to be 4 worried about recall bias. Recall bias was not 5 operating to create a disparity of results in this 6 body of literature. 7 But, in contrast, in the talc ovarian cancer 8 world, there is a disparity in the results by study 9 design; right? 10 A. We've already acknowledged there is some 11 heterogeneity in results. Is it due to recall bias? 12 Is it -- do we have to assume that recall bias is in 13 play here and that explains the higher -- or the 14 stronger associations generally reported in the 15 case-control studies. 16 And this article is addressing one -- one 17 potential bias, the recall bias. And I don't -- 18 I think that it provides support that we cannot just 19 do a knee-jerk reaction of "case-control studies, they 20 have the potential for recall bias, that leads to 21 higher estimates, and therefore, these studies are 22 biased." 23 There are other biases in play in the cohort 24 studies that I think are very plausible explanations 25 for why there might be some differences.</p>	<p style="text-align: right;">Page 233</p> <p>1 say "considerable media attention." 2 A. Yes. 3 Q. And then you evaluate the media attention 4 factor on the following page; right? 5 A. On page 23, yes. 6 Q. On 23, you say that, for the media attention 7 concern, you say in the middle of the first full 8 paragraph (as read): 9 "The concern is not relevant to 10 the vast majority of the studies 11 as virtually all the data 12 collection in the epidemiologic 13 studies of talc and ovarian cancer 14 occurred prior to such 15 litigation." 16 Do you see that? 17 A. Yes, I do. 18 Q. And you agree that media attention is not 19 limited to litigation; correct? 20 A. Yes. 21 Q. Did you undertake any effort to analyze the 22 extent of publicity or media attention to the talc 23 ovarian cancer issue prior to 2014? 24 A. I did not do any specific analysis of that. 25 I personally was unaware of any media attention on</p>



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<p style="text-align: right;">Page 234</p> <p>1 this topic prior to the litigation.</p> <p>2 Q. Then I believe on page 23, you go on to</p> <p>3 discuss the Schildkraut 2016 paper; correct?</p> <p>4 A. Yes.</p> <p>5 Q. Okay. And if we can pull that back out. It</p> <p>6 is the exhibit -- did I mark it?</p> <p>7 MS. PARFITT: I don't think so.</p> <p>8 MR. JAMES: Okay. I'll mark it as the</p> <p>9 next one, so you don't have to fish for it here. It's</p> <p>10 Exhibit 28.</p> <p>11 (Exhibit No. 28 was marked for identification.)</p> <p>12 MR. JAMES: Which is the Schildkraut</p> <p>13 2016 paper. I'll hand you two copies.</p> <p>14 BY MR. JAMES:</p> <p>15 Q. And so we touched upon this a bit earlier,</p> <p>16 Dr. Moorman, where we talked about the phraseology</p> <p>17 where you say the association was "attenuated but not</p> <p>18 eliminated."</p> <p>19 Do you recall that exchange we had earlier?</p> <p>20 THE WITNESS: Yes, I do.</p> <p>21 BY MR. JAMES:</p> <p>22 Q. Okay. And in this 2016 paper, again, you,</p> <p>23 among the authors, compared the odds ratios for talc</p> <p>24 and ovarian cancer for participants before 2014 and</p> <p>25 for participants after 2014; correct?</p>	<p style="text-align: right;">Page 236</p> <p>1 Q. And you -- I believe this table reflects --</p> <p>2 though I'm still looking for it, and maybe you can</p> <p>3 help me with it -- but the data in this table reflects</p> <p>4 that pre-2014 interviewees reported talc usage at the</p> <p>5 rate of 36 percent, and post-2014 interviewees</p> <p>6 reported rates -- excuse me, reported usage at the</p> <p>7 rate of 51 percent.</p> <p>8 A. Yes, I see that in the table.</p> <p>9 Q. And so that's a significant disparity in</p> <p>10 reported usage rates; would you agree with that?</p> <p>11 MS. PARFITT: Objection. Form.</p> <p>12 THE WITNESS: Clearly, it is what it</p> <p>13 is. It's 36 percent as -- versus 51 percent. Okay.</p> <p>14 BY MR. JAMES:</p> <p>15 Q. And so we have your paper here showing that</p> <p>16 before 2014, before the onset of the litigation, you</p> <p>17 had study participants reporting talc usage at a lower</p> <p>18 rate; right?</p> <p>19 A. Than -- yes.</p> <p>20 Q. And if you isolated the association analysis</p> <p>21 to those -- to that group, you also have a</p> <p>22 non-statistically significant association; correct?</p> <p>23 A. And again, when you stratify -- we've already</p> <p>24 covered that. I acknowledge that prior to 2014, it</p> <p>25 was not statistically significant. We also indicated</p>
<p style="text-align: right;">Page 235</p> <p>1 A. Correct.</p> <p>2 Q. And if we look at page 1414 -- I'm looking</p> <p>3 for my place here.</p> <p>4 If you look at Table 2, Dr. Moorman, you see</p> <p>5 there where you have broken out the data on interview</p> <p>6 date after 2014; right?</p> <p>7 A. Yes.</p> <p>8 Q. And then above that is the interview date</p> <p>9 before 2014; correct?</p> <p>10 A. Yes.</p> <p>11 Q. And we see that the odds ratio here for</p> <p>12 interview date after 2014 is 2.91; correct?</p> <p>13 A. That is correct.</p> <p>14 Q. That's well in excess of any odds ratio</p> <p>15 reported in any of the meta-analyses; correct?</p> <p>16 A. For the overall summary odds ratio, yes.</p> <p>17 Q. And before 2014, we see that the odds ratio</p> <p>18 is a 1.19 that is not statistically significant, which</p> <p>19 is what we discussed earlier; correct?</p> <p>20 A. Yes, we discussed that earlier.</p> <p>21 Q. And you also report in this article a</p> <p>22 distinction between the pre-2014 interviewees and the</p> <p>23 post-2014 interviewees based upon their reported talc</p> <p>24 usage; right?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 237</p> <p>1 certainly in the range of what many other studies have</p> <p>2 seen. But when you stratify like that, you are</p> <p>3 getting into smaller sample sizes. So there's</p> <p>4 statistical significance that -- the fact that it's no</p> <p>5 longer statistically significant is not all that</p> <p>6 surprising.</p> <p>7 Q. Have you seen the Trabert editorial that</p> <p>8 followed the publication of the Schildkraut article?</p> <p>9 A. I'm sure that I have read it at some point,</p> <p>10 but --</p> <p>11 Q. Okay. I'm going to -- I'm sorry.</p> <p>12 A. -- please, let's -- I haven't looked at it in</p> <p>13 quite some time.</p> <p>14 Q. So I'm going to mark as Exhibit 29 an</p> <p>15 editorial by Britton Trabert entitled "Body Powder and</p> <p>16 Ovarian Cancer Risk -- What is the Role of Recall</p> <p>17 Bias?"</p> <p>18 I'll hand you two copies.</p> <p>19 (Exhibit No. 29 was marked for identification.)</p> <p>20 BY MR. JAMES:</p> <p>21 Q. Dr. Moorman, does this editorial look</p> <p>22 familiar to you? Have you seen it before?</p> <p>23 A. Yes, I have seen it before.</p> <p>24 Q. Have you ever spoken with or communicated</p> <p>25 with Britton Trabert about this editorial?</p>

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<p style="text-align: right;">Page 238</p> <p>1 A. No, I have not.</p> <p>2 Q. And you see that in the right-hand column,</p> <p>3 about midway down, Dr. Trabert refers to the data</p> <p>4 points that we were just discussing; correct?</p> <p>5 A. Yes.</p> <p>6 Q. And if you look to the second page of the</p> <p>7 editorial, Trabert reports, at the last paragraph of</p> <p>8 the article (as read):</p> <p>9 "The current study highlights the</p> <p>10 concern over recall bias in</p> <p>11 case-control studies, particularly</p> <p>12 once an exposure becomes the</p> <p>13 subject of considerable media</p> <p>14 coverage."</p> <p>15 Do you see where I was reading that?</p> <p>16 A. Yes, I do.</p> <p>17 Q. Do you agree with Dr. Trabert's concerns</p> <p>18 about media coverage impacting the results of the</p> <p>19 Schildkraut study?</p> <p>20 A. I -- I think that the investigators on our</p> <p>21 study, they had that concern. That's why we did those</p> <p>22 analyses. So...</p> <p>23 Q. So do you acknowledge the possibility that</p> <p>24 the results of the 2016 study may reflect recall bias</p> <p>25 in the study?</p>	<p style="text-align: right;">Page 240</p> <p>1 possibility of recall bias, but I think that we looked</p> <p>2 at the other side of the coin as well.</p> <p>3 Q. And can you tell me where you're reading that</p> <p>4 sentence from, Dr. Moorman?</p> <p>5 A. Let's see. The -- it is on page 1416, the</p> <p>6 right-hand column, and it's about -- probably about</p> <p>7 eight or nine lines down.</p> <p>8 So I think that this sentence -- or this</p> <p>9 whole paragraph gives a pretty balanced assessment of</p> <p>10 the data, that we thoughtfully considered the issue of</p> <p>11 recall bias, but we also considered that maybe the</p> <p>12 greater publicity led to -- was kind of a memory</p> <p>13 trigger that led to more accurate recall.</p> <p>14 Q. And in your report, do you include a caution</p> <p>15 on the Schildkraut 2016 study about the potential for</p> <p>16 recall bias based upon the 2014 pre- and post-data?</p> <p>17 A. I -- let's see. We have discussed that</p> <p>18 section of the report a couple of times already. And</p> <p>19 I state that there is the possibility that recall bias</p> <p>20 could have led to the higher odds ratios when</p> <p>21 including women interviewed during the time when there</p> <p>22 was more media attention focused on this exposure.</p> <p>23 Q. And you're at page 23; right?</p> <p>24 A. Yes.</p> <p>25 Q. Okay. And then you conclude the middle</p>
<p style="text-align: right;">Page 239</p> <p>1 A. In this discussion -- if I may take just a</p> <p>2 moment to --</p> <p>3 Q. Certainly.</p> <p>4 A. Okay. You know, I think that</p> <p>5 Dr. Schildkraut, who did the major writing of this</p> <p>6 article -- and I think all of the coauthors were in</p> <p>7 agreement -- that we were concerned about the recall</p> <p>8 bias. As I said, that was some of the reason for</p> <p>9 doing those analyses.</p> <p>10 I think that it's also important to point</p> <p>11 out here the other possibility. There may have been</p> <p>12 some recall bias. But she also makes the statement</p> <p>13 that (as read):</p> <p>14 "It is possible that the lawsuit</p> <p>15 sharpened memories of body powder</p> <p>16 use and improved the accuracy of</p> <p>17 reported use for both cases and</p> <p>18 controls interviewed in 2014 or</p> <p>19 later."</p> <p>20 I think that that goes to say that anytime</p> <p>21 someone -- you know, there's some memory trigger, it</p> <p>22 could have made actually more accurate recall.</p> <p>23 So we --</p> <p>24 Q. And Dr. --</p> <p>25 A. I'm sorry. So we acknowledge both the</p>	<p style="text-align: right;">Page 241</p> <p>1 paragraph with the statement that -- the "attenuated</p> <p>2 but not eliminated" statement. But I'm not going to</p> <p>3 ask about that again. But you go on in that sentence</p> <p>4 to say (as read):</p> <p>5 "The association is not due</p> <p>6 entirely to recall bias."</p> <p>7 Do you see that phrasing that I just read?</p> <p>8 A. Yes.</p> <p>9 Q. So are you conveying in that wording that you</p> <p>10 think some portion of the odds ratio that you are</p> <p>11 seeing in these case-control studies that you're</p> <p>12 relying on or the meta-analyses that you're relying</p> <p>13 on, that some portion of that odds ratio is</p> <p>14 attributable to recall bias?</p> <p>15 MS. PARFITT: Objection.</p> <p>16 THE WITNESS: I think that probably</p> <p>17 every meta-analysis published, probably every</p> <p>18 case-control study that was published, we acknowledge</p> <p>19 this as a -- recall bias is a potential bias. But</p> <p>20 I think that we went on to give evidence --</p> <p>21 I explained why I did not think that it was a complete</p> <p>22 explanation.</p> <p>23 Can we completely rule out any possibility</p> <p>24 of recall bias? I don't know that we can do it. But</p> <p>25 I think that as -- for some of the reasons</p>

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<p style="text-align: right;">Page 242</p> <p>1 I articulated.</p> <p>2 I know that Dan Cramer in his 2016 paper</p> <p>3 also went into great detail considering the issue of</p> <p>4 recall bias. And I don't think that we can attribute</p> <p>5 this association to recall bias.</p> <p>6 BY MR. JAMES:</p> <p>7 Q. Can you cite to any publication that has</p> <p>8 analyzed the literature and ruled out recall bias --</p> <p>9 MS. PARFITT: Objection.</p> <p>10 BY MR. JAMES:</p> <p>11 Q. -- as a method -- as a basis for the elevated</p> <p>12 odds ratio of the 1.2 to 1.3 that you're citing in</p> <p>13 your report?</p> <p>14 MS. PARFITT: Objection.</p> <p>15 THE WITNESS: Okay. I went back to the</p> <p>16 Dan Cramer article, and I'm hoping that I'm recalling</p> <p>17 that particular article, the date of it, accurately.</p> <p>18 But he did analyze the data and the degree of</p> <p>19 misclassification that would have had to occur for</p> <p>20 recall bias to account for this association. He gave</p> <p>21 other reasons for why it seemed unlikely that recall</p> <p>22 bias would account for this association.</p> <p>23 So I think he did a pretty thorough</p> <p>24 analysis -- a thoughtful analysis of it.</p> <p>25</p>	<p style="text-align: right;">Page 244</p> <p>1 Q. Okay. Dr. Moorman, on page 11 of your</p> <p>2 report, you talk about -- this is where you begin your</p> <p>3 analysis of the Bradford Hill factors.</p> <p>4 A. Yes.</p> <p>5 Q. And are you there with me?</p> <p>6 A. Yes, I am.</p> <p>7 Q. Okay. You say, in page 11 -- you have a</p> <p>8 section titled "Strength and consistency of the</p> <p>9 association"; correct?</p> <p>10 A. Correct.</p> <p>11 Q. You say in the first sentence that strength</p> <p>12 and consistency are "deeply intertwined." Correct?</p> <p>13 A. Yes.</p> <p>14 Q. Can you cite to any publication where you</p> <p>15 have combined the analysis of strength and consistency</p> <p>16 before?</p> <p>17 A. I -- I can't cite any publication that</p> <p>18 specifically addresses that, no.</p> <p>19 Q. Can you cite any published authority that</p> <p>20 states these two Bradford Hill criteria are deeply</p> <p>21 intertwined?</p> <p>22 A. I -- I think that as I was -- I cannot cite a</p> <p>23 published authority.</p> <p>24 I think that, again, this is based on when</p> <p>25 I was looking at these and how I was weighting these</p>
<p style="text-align: right;">Page 243</p> <p>1 BY MR. JAMES:</p> <p>2 Q. Can you cite any other publications other</p> <p>3 than the Cramer 2016 paper, sitting here today, that</p> <p>4 have addressed recall bias in the fashion that you</p> <p>5 just described?</p> <p>6 A. The Cramer article is the one that I -- that</p> <p>7 comes to mind as the one that addressed it most</p> <p>8 thoroughly.</p> <p>9 Q. Have you ever published the three factors</p> <p>10 that you have addressed with regard to recall bias?</p> <p>11 A. The three factors are --</p> <p>12 Q. Sure. So --</p> <p>13 A. Okay.</p> <p>14 Q. Within your report, you -- we just walked</p> <p>15 through the three factors that you've considered, the</p> <p>16 three factors that you deemed to be a particular</p> <p>17 threat to case-control studies for recall bias;</p> <p>18 correct? We just walked through those three?</p> <p>19 A. Yes.</p> <p>20 Q. Have you ever published those three in any</p> <p>21 article or journal or anything else?</p> <p>22 A. I have not published that. That is just</p> <p>23 based on my general epidemiologic knowledge from doing</p> <p>24 this type of research and teaching in this field for</p> <p>25 the last couple of decades.</p>	<p style="text-align: right;">Page 245</p> <p>1 considerations.</p> <p>2 Q. Do you agree that strength is an important</p> <p>3 criteria in and of itself?</p> <p>4 A. I think that the strength of the association</p> <p>5 is an important criteria, but I think that we also</p> <p>6 have to bear in mind that as -- that there are many</p> <p>7 well-established causal associations that are</p> <p>8 certainly not in the order of magnitude of what we</p> <p>9 see, for example, with smoking and lung cancer.</p> <p>10 Q. Do you think the criteria of strength is met</p> <p>11 with the talc and ovarian cancer literature?</p> <p>12 A. When -- as I go through my report, I give</p> <p>13 numerous examples of well-accepted causal associations</p> <p>14 that are of a similar magnitude as what we see with</p> <p>15 talc and ovarian cancer, and so I think that the data</p> <p>16 are strong enough.</p> <p>17 Q. And I think that I'm going to ask my question</p> <p>18 again.</p> <p>19 A. Okay.</p> <p>20 Q. Do you think that the criteria of strength is</p> <p>21 met with the talc and ovarian cancer literature?</p> <p>22 A. Okay --</p> <p>23 MS. PARFITT: Objection. Asked and</p> <p>24 answered.</p> <p>25 Try again, Dr. Moorman.</p>

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<p style="text-align: right;">Page 246</p> <p>1 THE WITNESS: Okay. So, once again, 2 I -- we have to use -- we have to be careful of -- 3 Dr. Hill did not refer to these as "criteria," but 4 guidelines or viewpoints I think was the terminology 5 he used. And I do think that the criteria of strength 6 has been met. 7 BY MR. JAMES: 8 Q. Can you cite to a single study in the talc 9 ovarian cancer literature that refers to the 10 association as a strong association? 11 A. I -- I cannot, off the top of my head, think 12 of anyone that refers to it as a strong association. 13 I do, once again, want to say that we see evidence of 14 causal associations of similar magnitude; so I think 15 that it is strong enough to be a causal association. 16 Q. Do you understand that a number of the papers 17 that you have cited in your reference list or 18 materials-considered list refer to the association as 19 weak? 20 MS. PARFITT: Objection. 21 THE WITNESS: Which papers are you 22 referring to specifically? 23 BY MR. JAMES: 24 Q. If an author in the talc ovarian cancer 25 literature has referred to the association as a weak</p>	<p style="text-align: right;">Page 248</p> <p>1 MR. JAMES: It hasn't been answered. 2 MS. PARFITT: It's been asked. 3 THE WITNESS: I don't think that we 4 have any actual definition of what is modest. I think 5 that the association is what it is, a 25 to 30 percent 6 increased risk. 7 BY MR. JAMES: 8 Q. As an epidemiologist, you're not capable of 9 discerning whether an association is modest or not 10 modest? 11 MS. PARFITT: Objection. 12 THE WITNESS: As I have said before, 13 I don't think there is any clear definition of that 14 adjective. 15 BY MR. JAMES: 16 Q. Is there a definition in the epidemiologic 17 community of a weak association? Are you able to 18 understand what that would mean in the epidemiologic 19 community? 20 A. Once again, there is no -- to my knowledge, 21 there is nothing that would say, you know, an odds 22 ratio in this range is weak, this is modest, this is 23 moderate, this is strong. 24 And, again, going back to Bradford Hill, he 25 certainly emphasizes that there are some associations</p>
<p style="text-align: right;">Page 247</p> <p>1 association, would you agree or disagree with that 2 characterization? 3 MS. PARFITT: Object to form. 4 THE WITNESS: I would disagree with 5 the -- I would disagree with that. 6 BY MR. JAMES: 7 Q. If an author or authors in the talc ovarian 8 cancer literature have referred to the association as 9 modest, would you agree or disagree with that? 10 A. Once again, I think that many of the risk 11 factors that we are considering are not going to be 12 the odds ratios of 10 or greater that we saw with 13 this. 14 And when you read the papers written by 15 Dr. -- by Bradford Hill, he certainly makes the point 16 that some weaker associations can certainly be real. 17 Q. So is this a weaker association? 18 A. Weaker is in comparison to what? It's not -- 19 it's weaker than smoking and lung cancer. It is -- 20 I keep making the point that it -- we fully 21 acknowledge that it is not a tenfold increased risk. 22 It's a 25 to 30 percent increased risk. 23 Q. Would you call the association modest? 24 MS. PARFITT: Objection. Asked and 25 answered.</p>	<p style="text-align: right;">Page 249</p> <p>1 that are not in the magnitude of smoking and lung 2 cancer, but they are certainly real. 3 Q. And I think you're conflating -- or you're 4 misunderstanding my question, because you're answering 5 the question about whether the association is real or 6 not real, and my question for you is whether the 7 association is weak, modest, or strong. 8 How would you characterize it? 9 A. And I would -- as I have said, there is no 10 absolute terminology that would say what is a weak 11 association, what is modest, and what is strong. So 12 I think that it is more accurate just to describe it 13 as it is, a 25 to 30 percent increased risk of ovarian 14 cancer. 15 Q. Well, in assessing the Bradford Hill factors 16 or considerations or criteria -- in assessing that and 17 determining whether the association is strong or not 18 strong, as an epidemiologist, don't you need to be 19 capable of determining whether the association is 20 strong or not strong? 21 A. Once again, it is an adjective that is not 22 well defined. And -- 23 Q. And do you -- I'm sorry. 24 A. I -- I -- I keep going back to I think that 25 the association that we see is what it is, a 25 to</p>

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<p style="text-align: right;">Page 250</p> <p>1 30 percent increased risk. It is consistent with  2 other factors that we consider causal associations.  3 They have a similar strength of association.  4 Q. And I do -- I do intend to go to that very  5 next topic next --  6 A. Okay.  7 Q. -- but in assessing strength, what I'm asking  8 is whether, in all of the papers that you've cited,  9 when the epidemiologists that you've cited refer to  10 the association as weak or modest or small, is that  11 terminology that you can accept, or is that  12 terminology that you reject?  13 A. I say that it is terminology that is  14 imprecise. What one would consider modest, someone  15 else might consider moderate. It's imprecise  16 terminology.  17 Q. And certainly in the epidemiology world, if  18 you have a small or modest or weak association, what  19 you're saying is that that doesn't bar a causal  20 conclusion. But wouldn't you agree with me that if  21 the association is small or modest or weak, it makes  22 the other considerations more important?  23 MS. PARFITT: Objection.  24 THE WITNESS: I think that all of the  25 considerations are important. It's --</p>	<p style="text-align: right;">Page 252</p> <p>1 A. Yes.  2 Q. And these associations that you've listed,  3 you have concluded are generally accepted to be  4 causal; correct?  5 A. I think so, yes.  6 Q. And below that, you state that the IARC has  7 reached a causal conclusion with respect to each of  8 these associations; is that right?  9 A. Yes, that is what I state.  10 Q. And so to state that, are you saying that all  11 five of these exposures and associations have been  12 classified by IARC as Category 1?  13 A. I don't recall if -- I don't recall the  14 classifications, specifically, for all of these.  15 Q. Well, to say that the IARC has made a causal  16 judgment on these associations, you are necessarily  17 saying that they have classified these associations as  18 Category 1; correct?  19 A. I -- you know, I answered the question.  20 I don't recall which IARC category that each of these  21 exposures is right off the top of my head.  22 Q. But do you say in the report that they are  23 judged to be causal by IARC; correct?  24 A. I do say that in my report.  25 Q. And IARC has not judged talc ovarian cancer</p>
<p style="text-align: right;">Page 251</p> <p>1 BY MR. JAMES:  2 Q. Do you agree that, with a small association,  3 there's more concern for recall bias?  4 MS. PARFITT: Objection.  5 THE WITNESS: I think that with a  6 smaller association, there is more concern that it  7 could be due to bias from various reasons.  8 BY MR. JAMES:  9 Q. Can you cite to any scientific agency or  10 organization that has described the talc ovarian  11 cancer association as strong?  12 A. I do not recall anyone describing it that  13 way.  14 Q. Okay. And then we will turn now to page 12  15 of your report, Dr. Moorman, where you cite a number  16 of other exposures.  17 A. Yes.  18 Q. And do you see where I am?  19 A. Yes.  20 Q. And you say on page 12 that (as read):  21 "Well-accepted exposure to these  22 associations have relative risks  23 of similar magnitude and are  24 generally accepted to be causal."  25 Do you see where I was reading?</p>	<p style="text-align: right;">Page 253</p> <p>1 to be a causal association, has it?  2 A. As we have discussed several times today,  3 they describe it as possibly carcinogenic.  4 Q. Can you cite to any publication that assesses  5 the strength of an epidemiologic association by  6 considering "similar magnitude" odds ratios from  7 unrelated exposures to diseases?  8 A. I -- off the top of my head, I can't cite any  9 such publication.  10 Q. Have any scientific agencies that have looked  11 at this issue assessed strength of the talc ovarian  12 cancer relationship by considering similar magnitude  13 associations of unrelated exposures to diseases?  14 A. I know that in the Health Canada report, they  15 went through assessing the strength of the  16 association. I don't recall if they kind of  17 considered it in relation to other exposures that have  18 a similar magnitude of association.  19 Q. With regard to the associations that you have  20 identified on page 12, did you review the entire body  21 of scientific and medical literature pertaining to  22 those associations?  23 A. In -- let's see. Since when I cited these,  24 I did not go through the same level of detail like  25 I have done for the talc and ovarian cancer.</p>



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<p style="text-align: right;">Page 254</p> <p>1 The oral contraceptive use and breast cancer 2 that I cite, I was part of a team of researchers that 3 did a systematic review and meta-analysis of oral 4 contraceptives in relation to ovarian cancer as well 5 as breast cancer and some other cancers. 6 The other ones, again, I did not go in -- 7 did not review the body of literature in the same 8 detail as I did the talc and ovarian cancer. 9 Q. Did you assess, in any of these bodies of 10 literature, the risks for recall bias? 11 A. I did not. 12 Q. Did you consider, in these bodies of 13 literature, biologic mechanism for these five 14 exposures that you've identified? 15 A. I considered biologic mechanism, again, not 16 in the level of detail with the talc and ovarian 17 cancer. 18 Q. Did you assess them in a manner sufficient to 19 which you would opine in a published article or a 20 litigation report about the evidence supporting 21 causation? 22 A. I'm reading your question again. 23 Q. So am I. 24 A. I'm not sure. 25 Q. For these five exposures and diseases that</p>	<p style="text-align: right;">Page 256</p> <p>1 BY MR. JAMES: 2 Q. So in your report, when you are assessing 3 strength, and you discuss the fact that there are 4 similar magnitude odds ratios from other exposures 5 upon which one could conclude causation, you do not 6 also remark that there are similar magnitude ratios 7 upon one which could not conclude causation. 8 Why is that? Why did you lay out the 9 analysis this way? 10 A. What I was trying to do here is to make the 11 point that an association in the range of a 25 to 12 30 percent increased risk is something that there are 13 multiple examples of this being generally accepted as 14 a causal association. 15 I -- it was not my intent to describe the 16 entire universe of exposures and some that might be in 17 this range. 18 Q. There are certainly examples that you didn't 19 cite in the 1.2 to 1.3 range that are not causal; 20 right? 21 A. Did you have something specific in mind that 22 you are -- 23 Q. I'm asking you, actually. 24 Did you just go searching for similar 25 magnitude ratios upon which one could reach a</p>
<p style="text-align: right;">Page 255</p> <p>1 you've cited on page 12, did you assess the body of 2 scientific and medical literature and evidence in a 3 manner sufficient to which you would feel comfortable 4 offering an opinion in the published literature or in 5 a litigation report about causation? 6 A. I think that I have answered the question 7 repeatedly that I did not do it in the detail that 8 I did the talc and ovarian cancer. If I were to put 9 in published literature or a litigation report, 10 I would want to make sure that I had done it as 11 absolutely thoroughly as possible. 12 Q. Your comparison of the odds ratios to these 13 five exposures -- you acknowledge that there are 14 exposures that you have not identified in your report 15 that are in the 1.2 to 1.3 range that are not causal 16 or have not proven to be causal; correct? 17 MS. PARFITT: Objection. Form. 18 THE WITNESS: I acknowledge that -- of 19 course, that there are reports of exposures that have 20 reported relative risk in this range, and it could 21 either be something that was associated with another 22 risk factor and it was not the causal factor or the 23 level of evidence was not adequate. Maybe people -- 24 there were fewer articles, people have not gone 25 through the whole evaluation of the causal criteria.</p>	<p style="text-align: right;">Page 257</p> <p>1 causation conclusion? 2 A. I -- I think that I was trying to get at that 3 is this association strong enough to be causal? And 4 we have evidence from these other exposures that, yes, 5 it's certainly possible. 6 The point is that you do not -- or you do 7 not dismiss an association of 1.25 or 1.3 as it 8 couldn't possibly be causal. We have evidence to 9 suggest that it -- there are many examples of it. 10 Q. But in your report, Dr. Moorman, you're not 11 just not dismissing it. You're not just using the 12 similar magnitude odds ratios to not dismiss the 13 possibility that this is a real association. You're 14 using the similar magnitude ratios in an effort to 15 ascribe strength to the association; correct? 16 A. Right. I am saying that I think this is 17 strong enough to be a real association, and I think 18 that we have other examples of similar magnitude 19 associations that are generally accepted as causal 20 associations. 21 Q. But if there are other odds ratios for other 22 exposures to diseases that you did not identify in 23 your report in the 1.2 to 1.3 range that are not 24 causal, then the magnitude ratio that you have here in 25 the top ovarian cancer literature, in that instance,</p>

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<p style="text-align: right;">Page 258</p> <p>1 is not strong enough to support causation?</p> <p>2 MS. PARFITT: Objection. Form.</p> <p>3 BY MR. JAMES:</p> <p>4 Q. I'll just restate it because it's confusing.</p> <p>5 A. Yeah, it is.</p> <p>6 Q. To support strength in your report, why do</p> <p>7 you select only similar magnitude ratios that, by your</p> <p>8 estimation, are Category 1 -- by your estimation, have</p> <p>9 been declared by IARC to be causal associations? Why</p> <p>10 do you only select associations by which one has -- by</p> <p>11 which IARC has concluded causation? Why don't you</p> <p>12 also acknowledge that there are associations of a</p> <p>13 similar magnitude that don't support causation?</p> <p>14 MS. PARFITT: Objection.</p> <p>15 THE WITNESS: I'm not really sure --</p> <p>16 I'm still not really sure what you're getting at with</p> <p>17 this question.</p> <p>18 I think that I was trying to make the point</p> <p>19 that the association we see here is strong enough to</p> <p>20 be accepted as a causal association. I'm not -- I'm</p> <p>21 not saying that every association of this magnitude</p> <p>22 has gone through the same process of assessing all of</p> <p>23 the Bradford Hill viewpoints and have come to the same</p> <p>24 conclusion, but I am saying that we have multiple</p> <p>25 examples of where an association of this magnitude is</p>	<p style="text-align: right;">Page 260</p> <p>1 Do you see where I'm reading that?</p> <p>2 A. Yes.</p> <p>3 Q. There, are you referring to epidemiologic</p> <p>4 literature?</p> <p>5 A. What -- you're taking one sentence and --</p> <p>6 I think that I discussed what I considered related to</p> <p>7 the passive smoke exposure and lung cancer and</p> <p>8 described it in more detail on page 13, the first full</p> <p>9 paragraph.</p> <p>10 Q. And is it fair to say that that body of</p> <p>11 evidence that you're referring to there is the</p> <p>12 epidemiologic literature?</p> <p>13 A. Yes.</p> <p>14 Q. You're not referring there to any sort of</p> <p>15 mechanistic studies or plausibility studies or</p> <p>16 anything like that; correct?</p> <p>17 A. No. I was looking at -- basically, I was</p> <p>18 comparing the two -- or the meta-analyses for the two</p> <p>19 topics.</p> <p>20 Q. On page 14, Dr. Moorman, you discuss the</p> <p>21 "prevalence of exposure."</p> <p>22 Do you see where I am? It's the --</p> <p>23 A. It's about halfway down?</p> <p>24 Q. Yeah, second full paragraph.</p> <p>25 A. Yes.</p>
<p style="text-align: right;">Page 259</p> <p>1 causal.</p> <p>2 MS. PARFITT: Scott, is this a breaking</p> <p>3 point or no?</p> <p>4 MR. JAMES: How long have we been</p> <p>5 going?</p> <p>6 MR. FARIES: About an hour and 15.</p> <p>7 MS. BRENNAN: Yeah, we've been going</p> <p>8 about an hour and 15.</p> <p>9 MR. JAMES: Sure. Are we ready for a</p> <p>10 break?</p> <p>11 MS. PARFITT: Sure. Just a short one,</p> <p>12 yeah. Thank you.</p> <p>13 THE VIDEOGRAPHER: Going off the record</p> <p>14 at 4:33 p.m.</p> <p>15 (Recess taken from 4:33 p.m. to 4:46 p.m.)</p> <p>16 THE VIDEOGRAPHER: Back on record at</p> <p>17 4:47 p.m.</p> <p>18 BY MR. JAMES:</p> <p>19 Q. Dr. Moorman, on page 13 to 14 of your report,</p> <p>20 and really the top of page 14, you have a sentence</p> <p>21 stating that (as read):</p> <p>22 "The evidence for talc and ovarian</p> <p>23 cancer is as significant as for</p> <p>24 passive smoke exposure and lung</p> <p>25 cancer."</p>	<p style="text-align: right;">Page 261</p> <p>1 Q. And you say that it's critical to consider</p> <p>2 the prevalence of exposure in conjunction with</p> <p>3 considering strength; correct?</p> <p>4 A. I say (as read):</p> <p>5 "It's critical to consider the</p> <p>6 prevalence of the exposure in the</p> <p>7 population when evaluating its</p> <p>8 public health impact."</p> <p>9 Q. Before that, you say "in conjunction with the</p> <p>10 strength of the association." Right?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. Do you think that the prevalence of</p> <p>13 exposure in the population, that that impacts your</p> <p>14 analysis on whether an association is strong or not</p> <p>15 strong?</p> <p>16 A. I think that the way that I stated it here</p> <p>17 is, you know, as an epidemiologist, a public health</p> <p>18 professional, I'm interested in the public health</p> <p>19 impact and how many cases of disease could be</p> <p>20 attributable to this exposure.</p> <p>21 So I go through and describe that factor</p> <p>22 that has a stronger association but is less common in</p> <p>23 the population could have potentially less public</p> <p>24 health impact than a risk factor that is -- doesn't</p> <p>25 have as high an odds ratio but you have many more</p>

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<p>1 exposed people in the population.</p> <p>2 Q. Moving on to consistency, Dr. Moorman, is</p> <p>3 consistency met on this body of literature?</p> <p>4 A. I do feel that consistency is met.</p> <p>5 Q. And on page 14, you -- I think it's page 14.</p> <p>6 Yes. In the first full paragraph, you discuss your --</p> <p>7 you see the last sentence of that paragraph, where you</p> <p>8 say (as read):</p> <p>9 "This observation has been quite</p> <p>10 consistent with findings</p> <p>11 replicated in studies conducted by</p> <p>12 different teams of investigators</p> <p>13 in different geographic locations</p> <p>14 and different race ethnic groups</p> <p>15 over a span of several decades."</p> <p>16 Do you see that?</p> <p>17 A. Yes, I do.</p> <p>18 Q. Is that reflective of -- is that the basis</p> <p>19 upon which you conclude consistency is met?</p> <p>20 A. It is part of the basis of it. I think that,</p> <p>21 when we look at the overall meta-analyses, we look at</p> <p>22 the direction of the effect in all the studies and of</p> <p>23 these, like, 27 different studies, like, 90 percent of</p> <p>24 them show an increased -- or an odds ratio greater</p> <p>25 than 1.</p>	<p>1 cancer?</p> <p>2 A. They -- if we can go back to them, we see</p> <p>3 that there are multiple studies from the Nurses'</p> <p>4 Health Study, and then the Houghton study. They are</p> <p>5 showing a relative risk in most cases, I think, 1.12</p> <p>6 to 1.19. And, again, we have discussed some of the</p> <p>7 biases that might result in an attenuation of the</p> <p>8 association.</p> <p>9 And so I acknowledge that, with the</p> <p>10 exception of the serous invasive cancer in one of the</p> <p>11 studies, the associations have not been statistically</p> <p>12 significant, but they are certainly kind of in the</p> <p>13 direction of -- as the case-control studies.</p> <p>14 Q. Doctor, let's turn back briefly to the</p> <p>15 Houghton study. It's Exhibit 25.</p> <p>16 Are you with me?</p> <p>17 Dr. Moorman, if we look at the Houghton</p> <p>18 study on the first page in the results section of the</p> <p>19 abstract. Do you see where I'm looking?</p> <p>20 A. Yes.</p> <p>21 Q. Okay. The authors there, they report</p> <p>22 every-use odds ratio as a 1.06.</p> <p>23 Do you see that?</p> <p>24 A. I do see that --</p> <p>25 Q. Okay. I'm running out of time, Dr. Moorman,</p>
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<p>1 When we look at epidemiologic data, for</p> <p>2 reasons that we have discussed earlier today, it is</p> <p>3 very uncommon for every single study to reach the same</p> <p>4 conclusion. Some are going to have higher risk; some</p> <p>5 are going to be lower risk. And the level of</p> <p>6 consistency seen here, where virtually every study is</p> <p>7 showing an odds ratio greater than 1, I consider that</p> <p>8 quite consistent.</p> <p>9 Q. You understand that Bradford Hill, when he</p> <p>10 describes consistency, he talks about consistency</p> <p>11 across study design.</p> <p>12 Were you aware of that?</p> <p>13 A. Yes, I am. And I actually do -- the way that</p> <p>14 I described consistency, where even, you know -- two</p> <p>15 of the three cohort studies -- and we've already</p> <p>16 discussed the concerns I have about the Sister Study,</p> <p>17 which is really quite an outlier when we look at this</p> <p>18 whole body of literature. But both the Houghton study</p> <p>19 and the Nurses' Health Study, they are consistent in</p> <p>20 terms of the direction of the effect. And we have</p> <p>21 discussed the statistical significance at all.</p> <p>22 But in terms of the direction of the effect,</p> <p>23 I think that it is consistent.</p> <p>24 Q. So is your position that the cohorts</p> <p>25 demonstrate an association between talc and ovarian</p>	<p>1 so I really am going to ask you to answer my precise</p> <p>2 question.</p> <p>3 Do you see where the authors, they say</p> <p>4 there -- the authors say that it's "not associated</p> <p>5 with risk of ovarian cancer compared with never-use."</p> <p>6 Do you see that?</p> <p>7 A. Yes, that is what they state.</p> <p>8 Q. Okay. And 1.06 is -- again, it's not a</p> <p>9 statistically significant association; correct?</p> <p>10 A. With the confidence interval that they</p> <p>11 report. That's what tells you whether or not it's</p> <p>12 statistically significant. And with that confidence</p> <p>13 interval, no, it is not statistically significant.</p> <p>14 Q. And it's also very close to the null, isn't</p> <p>15 it?</p> <p>16 A. Yes. It's the 1.06, yes.</p> <p>17 Q. And the conclusion of the authors here is</p> <p>18 that (as read):</p> <p>19 "Perineal powder use does not</p> <p>20 appear to influence ovarian cancer</p> <p>21 risk."</p> <p>22 Correct?</p> <p>23 A. That's what they state, yes.</p> <p>24 Q. So this is one of the cohorts that you're</p> <p>25 talking about today; correct?</p>

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<p style="text-align: right;">Page 266</p> <p>1 A. Right. And --</p> <p>2 Q. And the authors here conclude that there's</p> <p>3 not an association between ovarian cancer risk and</p> <p>4 perineal talc use, don't they?</p> <p>5 MS. PARFITT: Objection. Form.</p> <p>6 THE WITNESS: Okay. Yes, I acknowledge</p> <p>7 that's their conclusion. And I think that -- I'm</p> <p>8 sorry -- the data that I was referring to comes from</p> <p>9 Table 3. And I, again, acknowledge that it was not</p> <p>10 statistically significant, but he said only genital</p> <p>11 powder use -- which is mostly what we're</p> <p>12 considering -- it had a hazard ratio of 1.4 or 1.3 --</p> <p>13 I'm sorry -- 1.14 or 1.13.</p> <p>14 And so, again, it's in the direction of</p> <p>15 effect, and, as we have discussed, biases could have</p> <p>16 led to some attenuation.</p> <p>17 BY MR. JAMES:</p> <p>18 Q. Are you saying that you believe that there's</p> <p>19 consistency among -- or between the case-control</p> <p>20 studies and the cohort studies in the talc ovarian</p> <p>21 cancer literature?</p> <p>22 A. I am saying that -- as I have pointed out</p> <p>23 here and with also the Nurses' Health Study, I am</p> <p>24 saying that there is consistency in the direction of</p> <p>25 the effect that they observed, and acknowledging that</p>	<p style="text-align: right;">Page 268</p> <p>1 right around 1. About half the studies have odds</p> <p>2 ratios greater than 1; about half have odds ratios</p> <p>3 less than 1. So in that case, I would say there is no</p> <p>4 consistency.</p> <p>5 I contrast it with this where, when you look</p> <p>6 at the forest plots from the meta-analyses, nearly all</p> <p>7 of the studies have odds ratios greater than 1.</p> <p>8 BY MR. JAMES:</p> <p>9 Q. And you're including in that testimony the</p> <p>10 cohort studies?</p> <p>11 A. Yes.</p> <p>12 Q. Odds ratios that are not statistically</p> <p>13 significant, in your mind, demonstrate consistency</p> <p>14 by -- among study design. Is that your testimony?</p> <p>15 MS. PARFITT: Objection. Form.</p> <p>16 THE WITNESS: I'm sorry --</p> <p>17 BY MR. JAMES:</p> <p>18 Q. Your testimony here today is that the results</p> <p>19 reached by the cohort studies and the case-control</p> <p>20 studies are consistent. Is that your testimony?</p> <p>21 A. My testimony, as I have stated repeatedly,</p> <p>22 that there is a great deal of consistency in the</p> <p>23 direction of the effect, that nearly all of the</p> <p>24 studies report an odds ratio greater than 1. And</p> <p>25 I acknowledge that not all studies are statistically</p>
<p style="text-align: right;">Page 267</p> <p>1 these were not statistically significant findings.</p> <p>2 Q. So even though the authors report that</p> <p>3 there's not an association, you're claiming today that</p> <p>4 the cohort studies are consistent with the</p> <p>5 case-control studies in finding a association?</p> <p>6 MS. PARFITT: Objection. Form.</p> <p>7 THE WITNESS: I think that I have</p> <p>8 answered the question already that, in terms of the</p> <p>9 direction of the effect, that the Houghton study for</p> <p>10 the genital powder use and as well as some of the data</p> <p>11 from the Nurses' Health Study, it is consistent that</p> <p>12 there -- the odds ratio is greater than 1.</p> <p>13 BY MR. JAMES:</p> <p>14 Q. So as long as the odds ratio, even if it's</p> <p>15 statistically insignificant, exceeds 1, then you are</p> <p>16 claiming that that's reflective of an association that</p> <p>17 is consistent with the case-control studies?</p> <p>18 MS. PARFITT: Objection. Form.</p> <p>19 THE WITNESS: I am saying that there is</p> <p>20 consistency in the direction of the effect.</p> <p>21 If I may clarify. If you look at something</p> <p>22 like alcohol use and ovarian cancer, which is a fact,</p> <p>23 which overall there seems to be little association</p> <p>24 between alcohol and ovarian cancer, if you look at the</p> <p>25 meta-analyses from there, the overall estimate is</p>	<p style="text-align: right;">Page 269</p> <p>1 significant, but I'm just saying that the direction of</p> <p>2 the effect is very consistent.</p> <p>3 Q. And we talked earlier today about the Berge</p> <p>4 paper; correct?</p> <p>5 A. Yes, we did.</p> <p>6 Q. And they have performed an analysis for</p> <p>7 heterogeneity on the -- by study design; right?</p> <p>8 A. If I could go back to that.</p> <p>9 Q. Sure.</p> <p>10 A. Okay.</p> <p>11 Q. Dr. Moorman, if we look at the abstract of</p> <p>12 the paper, at the beginning, this is the point we</p> <p>13 discussed earlier. Here, the authors say (as read):</p> <p>14 "The heterogeneity of results by</p> <p>15 study design detracts from a</p> <p>16 causal interpretation."</p> <p>17 Correct?</p> <p>18 A. That is the statement that they make in their</p> <p>19 abstract, yes.</p> <p>20 Q. Okay. And then we looked earlier also at the</p> <p>21 Figure 2; correct?</p> <p>22 A. Yes, we did.</p> <p>23 Q. Okay. And, again, that reflects an analysis</p> <p>24 of the cohorts as compared to the case-controls;</p> <p>25 correct?</p>

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<p style="text-align: right;">Page 270</p> <p>1 A. Yes.</p> <p>2 Q. If you look at page 253 of the Berge article,</p> <p>3 and we look at the right column, the first -- the</p> <p>4 second full paragraph, the authors there state</p> <p>5 (as read):</p> <p>6 "The fact that the association</p> <p>7 between genital talc use and risk</p> <p>8 of ovarian cancer is present in</p> <p>9 case-control but not in cohort</p> <p>10 studies can be attributed to bias</p> <p>11 in the former type of studies."</p> <p>12 Do you see that?</p> <p>13 A. I do see what they say.</p> <p>14 I -- I think that they are not considering</p> <p>15 that there is also potential bias in the cohort</p> <p>16 studies. They say "bias in the former type of</p> <p>17 studies," not acknowledging the biases in the cohort</p> <p>18 studies.</p> <p>19 When you look at these data for the cohort</p> <p>20 studies, you look at the Gonzalez study, which again,</p> <p>21 I have referred to it as kind of an outlier with its</p> <p>22 relative risk of .73, there are many problems with</p> <p>23 that study. They assessed exposure in the past 12</p> <p>24 months. The level of exposure is very different than</p> <p>25 many of the other studies.</p>	<p style="text-align: right;">Page 272</p> <p>1 noted in some meta-analysis and</p> <p>2 reviews, there are considerations</p> <p>3 about those that should be taken</p> <p>4 into account."</p> <p>5 Q. Do you believe that there are inconsistencies</p> <p>6 in the literature with regard to dose-response? Yes</p> <p>7 or no.</p> <p>8 A. I think that, yes, that there -- that across</p> <p>9 the studies, some have found a dose-response, some</p> <p>10 have not.</p> <p>11 Q. At the bottom of page 30, you say that</p> <p>12 (as read):</p> <p>13 "When considering the studies that</p> <p>14 examine dose-response associations</p> <p>15 considering both dose and</p> <p>16 frequency to estimate the total</p> <p>17 number of applications of talc,</p> <p>18 the majority did find significant</p> <p>19 trends of higher risk with more</p> <p>20 lifetime applications of talc."</p> <p>21 Do you see that, where I read that?</p> <p>22 A. Yes.</p> <p>23 Q. Okay. And so for that proposition, you're</p> <p>24 citing to eight studies. If you look at the</p> <p>25 footnotes, you would agree with me that that's</p>
<p style="text-align: right;">Page 271</p> <p>1 And so part of the heterogeneity by study</p> <p>2 design could be attributed to this Gonzalez study that</p> <p>3 has very significant biases.</p> <p>4 Q. If other experts for Plaintiffs in this MDL</p> <p>5 litigation have conceded that there is not consistency</p> <p>6 between the cohorts and the case-controls, then you</p> <p>7 would differ with those experts; correct?</p> <p>8 MS. PARFITT: Objection. Form.</p> <p>9 THE WITNESS: I have --</p> <p>10 MS. PARFITT: Misstates the evidence.</p> <p>11 Thank you.</p> <p>12 THE WITNESS: I have answered the</p> <p>13 question, I think I've answered it repeatedly, why</p> <p>14 I think that the aspect of consistency is met.</p> <p>15 BY MR. JAMES:</p> <p>16 Q. Okay. On dose-response -- on page 30, you</p> <p>17 include discussion of dose-response in the literature.</p> <p>18 A. Yes.</p> <p>19 Q. And you acknowledge in your report that there</p> <p>20 are inconsistencies in reported dose-response;</p> <p>21 correct?</p> <p>22 A. I -- what I state is (as read):</p> <p>23 "While the inconsistency in</p> <p>24 reported dose-response trends for</p> <p>25 talc and ovarian cancer have been</p>	<p style="text-align: right;">Page 273</p> <p>1 reflective of eight studies cited; correct?</p> <p>2 A. Yes.</p> <p>3 Q. And you're saying that five of the eight</p> <p>4 studies that have looked at dose and frequency</p> <p>5 together did find significant trends; correct?</p> <p>6 A. Yes.</p> <p>7 Q. Among those studies that you cite for that</p> <p>8 proposition that the majority of those studies reflect</p> <p>9 a dose-response, you cited to the Mills study;</p> <p>10 correct?</p> <p>11 A. I believe so.</p> <p>12 MS. PARFITT: And, Dr. Moorman, you</p> <p>13 have your binder in front of you as well if you need</p> <p>14 it.</p> <p>15 MR. JAMES: Okay. I'm going to mark</p> <p>16 Mills as Exhibit 30.</p> <p>17 (Exhibit No. 30 was marked for identification.)</p> <p>18 BY MR. JAMES:</p> <p>19 Q. I'm going to hand you two copies.</p> <p>20 And, again, this is one of the papers you've</p> <p>21 cited for the proposition that there's a dose-response</p> <p>22 in the majority of studies that have looked at</p> <p>23 frequency times duration; correct?</p> <p>24 A. Okay. Yes.</p> <p>25 Q. And we're looking at Table 2 as the relevant</p>



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<p style="text-align: right;">Page 274</p> <p>1 table with the data; correct?</p> <p>2 A. Yes.</p> <p>3 Q. And if you look at Table 2, you go down to</p> <p>4 the cumulative use category, it says "frequency times</p> <p>5 duration"; correct?</p> <p>6 A. Yes.</p> <p>7 Q. And if I'm looking at this correctly,</p> <p>8 Dr. Moorman, doesn't the data in that table reflect an</p> <p>9 actual decrease in the odds ratio for the highest</p> <p>10 exposure category?</p> <p>11 MS. PARFITT: Objection. Form.</p> <p>12 THE WITNESS: It is -- the highest</p> <p>13 category, yes, does report an odds ratio of 1.06.</p> <p>14 BY MR. JAMES:</p> <p>15 Q. And based upon that, is it fair to say that</p> <p>16 this paper reflects a dose-response when measuring</p> <p>17 frequency times duration?</p> <p>18 A. They looked at the -- they did a test for</p> <p>19 trend, and we have a p-value of .051, so right at</p> <p>20 borderline statistically significant. Some people</p> <p>21 would argue that you should never use two decimal</p> <p>22 points for p-values. But nonetheless, it's -- the</p> <p>23 trend test was what I was referring to here, that it</p> <p>24 was right at borderline statistical significance.</p> <p>25 Q. And if you look at page 463 of the article,</p>	<p style="text-align: right;">Page 276</p> <p>1 Q. And they're not just acknowledging that</p> <p>2 there's not a perfect linear increase; they're saying</p> <p>3 that there's no dose-response for cumulative use.</p> <p>4 A. They say there is not a clear dose-response.</p> <p>5 I think -- you know, again, that's what they say. My</p> <p>6 conclusion here was, again, based on the test for</p> <p>7 trend that they did. I don't think that it was</p> <p>8 inaccurate, what I said here.</p> <p>9 Q. Another paper that you cite for the majority</p> <p>10 claim is the Terry 2013 paper; correct?</p> <p>11 A. Yes.</p> <p>12 Q. And do you know what the authors concluded in</p> <p>13 that paper about dose-response for cumulative use?</p> <p>14 A. May we look at that article?</p> <p>15 Q. Sure. It's Exhibit 24. And if we look at</p> <p>16 the abstract first together, the abstract says, the</p> <p>17 second sentence from the bottom (as read):</p> <p>18 "Among genital powder users, we</p> <p>19 observed no significant trend in</p> <p>20 risk with increasing number of</p> <p>21 lifetime applications assessed in</p> <p>22 quartiles."</p> <p>23 Did I read that correctly?</p> <p>24 MS. PARFITT: In the abstract?</p> <p>25 THE WITNESS: I'm sorry, I wasn't quite</p>
<p style="text-align: right;">Page 275</p> <p>1 the third full paragraph down -- 463 in the left</p> <p>2 column -- the authors -- this is in the authors'</p> <p>3 words. They say (as read):</p> <p>4 "As in other studies, the present</p> <p>5 study did not find a clear</p> <p>6 dose-response based on duration of</p> <p>7 use or cumulative use."</p> <p>8 Do you see that?</p> <p>9 A. Right. And they go on to say that -- again,</p> <p>10 I was basing what I said here based on their test for</p> <p>11 trend, and -- and I think they do acknowledge that in</p> <p>12 that category where they had relatively few exposed</p> <p>13 cases, they didn't -- it was not a perfectly linear</p> <p>14 association.</p> <p>15 Q. So the authors are concluding that there's</p> <p>16 not dose-response for cumulative use; correct?</p> <p>17 MS. PARFITT: Objection.</p> <p>18 BY MR. JAMES:</p> <p>19 Q. Yes or no? That's what the authors conclude</p> <p>20 in the text that we just read together?</p> <p>21 A. I -- what we read -- yes. I'm trying --</p> <p>22 let's see.</p> <p>23 Yeah, I think that they are acknowledging</p> <p>24 that it was not a perfect linear increase. My report</p> <p>25 was basing it on the test for trend that they did.</p>	<p style="text-align: right;">Page 277</p> <p>1 there with you. Could you --</p> <p>2 BY MR. JAMES:</p> <p>3 Q. Understood. No worries.</p> <p>4 A. Okay.</p> <p>5 Q. So second sentence from the bottom of the</p> <p>6 abstract, the author's conclusions on dose-response</p> <p>7 are as follows (as read):</p> <p>8 "Among genital powder users, we</p> <p>9 observed no significant trend in</p> <p>10 risk with increasing number of</p> <p>11 lifetime applications assessed in</p> <p>12 quartiles."</p> <p>13 A. That's what they describe, and --</p> <p>14 Q. I just asked, is that -- did I read that</p> <p>15 correctly?</p> <p>16 A. You did read that correctly.</p> <p>17 Q. So the authors of the paper that you've cited</p> <p>18 as one of the five papers that finds dose-response by</p> <p>19 measuring lifetime of cumulative use says the exact</p> <p>20 opposite; correct?</p> <p>21 MS. PARFITT: Objection.</p> <p>22 THE WITNESS: If I may take just a</p> <p>23 moment. I want to find the part of this paper that</p> <p>24 supported the statement that I made in my report.</p> <p>25 MR. JAMES: Sure. Let's go off the</p>

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<p style="text-align: right;">Page 278</p> <p>1 record.</p> <p>2 THE VIDEOGRAPHER: Going off record at</p> <p>3 5:14 p.m.</p> <p>4 (Off the record.)</p> <p>5 THE VIDEOGRAPHER: Back on record at</p> <p>6 5:15 p.m.</p> <p>7 THE WITNESS: Okay. On page 817, it</p> <p>8 reads (as read):</p> <p>9 "Although a significant increase</p> <p>10 in risk with an increasing number</p> <p>11 of genital powder applications was</p> <p>12 found for non-mucinous epithelial</p> <p>13 ovarian cancer when non-users were</p> <p>14 included in the analysis."</p> <p>15 And it then goes on (as read):</p> <p>16 "Note trend in cumulative use was</p> <p>17 evident in analyses restricted to</p> <p>18 ever-users of genital powders."</p> <p>19 And so, again, my -- the statement that</p> <p>20 I had here, "a significant trend with increasing</p> <p>21 number of genital powder applications," they make the</p> <p>22 distinction of looking at the trend when you include</p> <p>23 non-users, and that's a pretty standard thing to do in</p> <p>24 epidemiology. It's -- you look -- can look as</p> <p>25 non-users as your reference group and then assess a</p>	<p style="text-align: right;">Page 280</p> <p>1 questions, Dr. Moorman.</p> <p>2 MR. JAMES: Michelle, is it fine if</p> <p>3 I have some time to review my notes while the others</p> <p>4 are asking questions and then come back?</p> <p>5 MS. PARFITT: Sure.</p> <p>6 MR. JAMES: Is that okay with you?</p> <p>7 MS. PARFITT: That's fine. Sure.</p> <p>8 MS. FOSTER: Can we go off and I'll</p> <p>9 switch.</p> <p>10 THE VIDEOGRAPHER: Going off the record</p> <p>11 at 5:18 p.m.</p> <p>12 (Off the record.)</p> <p>13 THE VIDEOGRAPHER: Back on record at</p> <p>14 5:20 p.m.</p> <p>15 CROSS-EXAMINATION BY COUNSEL FOR THE DEFENDANT</p> <p>16 IMERY'S TALC AMERICA, INC.</p> <p>17 BY MS. FOSTER:</p> <p>18 Q. Good evening, Dr. Moorman. We met a long</p> <p>19 time ago this morning. My name is Jennifer Foster.</p> <p>20 I represent one of the Defendants in this action,</p> <p>21 Imery's Talc America, Inc. Do you understand that?</p> <p>22 A. Yes, I do.</p> <p>23 Q. And before you got involved in this</p> <p>24 litigation, did you know who Imery's Talc America, Inc.</p> <p>25 was?</p>
<p style="text-align: right;">Page 279</p> <p>1 trend.</p> <p>2 I know what they say here, but I -- but</p> <p>3 I think that what I stated in my report is accurate,</p> <p>4 that they did find that a significant trend. So</p> <p>5 I don't think that I'm misstating what -- the data in</p> <p>6 the paper.</p> <p>7 BY MR. JAMES:</p> <p>8 Q. So the results that are reported by the</p> <p>9 authors in the abstract you disagree with; correct?</p> <p>10 MS. PARFITT: Objection. Form.</p> <p>11 BY MR. JAMES:</p> <p>12 Q. The statements in the abstract pertaining to</p> <p>13 dose-response, do you disagree with those statements?</p> <p>14 A. What they say is "among genital powder</p> <p>15 users." And so the statement that they make is</p> <p>16 accurate, but I think that they are citing data</p> <p>17 that -- it's one way to look at the data, but I think</p> <p>18 that considering the non-users in their test for trend</p> <p>19 is also a very well-accepted way to do that, to do a</p> <p>20 test for trend.</p> <p>21 And so I think that both -- they reported</p> <p>22 one aspect of their analysis, and I reported what</p> <p>23 I think accurately reflects another aspect of their</p> <p>24 analysis.</p> <p>25 Q. Okay. I am getting close to the end of my</p>	<p style="text-align: right;">Page 281</p> <p>1 A. No, I did not.</p> <p>2 Q. Had you ever heard of them before?</p> <p>3 A. No.</p> <p>4 Q. And do you have an understanding of who they</p> <p>5 are now that you've become involved in the litigation?</p> <p>6 A. I do.</p> <p>7 Q. And you understand that Imery's mines and</p> <p>8 supplies talc to Johnson &amp; Johnson for use in some of</p> <p>9 its talcum powder products?</p> <p>10 A. That is my understanding, yes.</p> <p>11 Q. Do you understand that Imery's does not sell</p> <p>12 talcum powder products directly to consumers?</p> <p>13 A. That was my understanding, yes.</p> <p>14 Q. And based on some testimony earlier today</p> <p>15 about the basis of your opinions being grounded in</p> <p>16 epidemiology studies about talcum powder products, am</p> <p>17 I correct that you wouldn't have any personal</p> <p>18 knowledge with respect to the composition of the talc</p> <p>19 that Imery's mines and supplies to Johnson &amp; Johnson?</p> <p>20 MS. PARFITT: Objection.</p> <p>21 THE WITNESS: No, I would not have that</p> <p>22 personal knowledge.</p> <p>23 BY MS. FOSTER:</p> <p>24 Q. And you have no opinions about any talc</p> <p>25 mining practices that Imery's employs; correct?</p>

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<p>1 A. I know nothing about their mining practices.</p> <p>2 Q. And you have no opinions about Imerys's</p> <p>3 compliance with any applicable standards or</p> <p>4 specifications regarding the mining of talc; correct?</p> <p>5 A. I do not know anything about that.</p> <p>6 Q. And I'm going to be hopping around a lot</p> <p>7 because Mr. James covered a lot of ground, so just</p> <p>8 bear with me. If I go somewhere and you don't know</p> <p>9 what I'm talking about, please just tell me you don't</p> <p>10 know what I'm talking about --</p> <p>11 A. Okay.</p> <p>12 Q. -- and I'll rephrase so that we can get on</p> <p>13 the same page.</p> <p>14 One of the first things you talked about</p> <p>15 this morning when you were talking to Mr. James is</p> <p>16 that you have entered a period I think you called</p> <p>17 preretirement transition. Do I have that right?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And do you have a retirement date in</p> <p>20 mind?</p> <p>21 A. That's still somewhat being discussed with my</p> <p>22 husband.</p> <p>23 Q. Okay. So you don't have a set "I'm going to</p> <p>24 retire in a year," for example?</p> <p>25 A. The exact date is not defined yet.</p>	<p>1 A. Yes, that is.</p> <p>2 Q. And is that a study that's designed to</p> <p>3 collect new data from study participants, or is that</p> <p>4 going to be an evaluation of data that you already</p> <p>5 have collected from other studies?</p> <p>6 A. It is a consortium that is planning to</p> <p>7 analyze data that have already been collected. It</p> <p>8 involves -- I believe it is a total of seven studies;</p> <p>9 some case-control, some cohort studies.</p> <p>10 Q. And -- were you finished? I'm sorry.</p> <p>11 A. Go ahead.</p> <p>12 Q. And how were the studies selected to be</p> <p>13 included in that consortium?</p> <p>14 A. It was -- the purpose of that was to try to</p> <p>15 put more data together, especially related to women of</p> <p>16 African ancestry. So they're all US studies, so</p> <p>17 African American. Recognizing that the AACES study,</p> <p>18 with about 600 cases, we still have some issues with</p> <p>19 statistical power. So we contacted -- Dr. Schildkraut</p> <p>20 is the PI on this study as well.</p> <p>21 And so studies that had a reasonable number</p> <p>22 of African American study participants, they were</p> <p>23 contacted to see if they were interested in</p> <p>24 participating in such a study.</p> <p>25 And so it includes studies such as the Black</p>
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<p>1 Q. And when you do retire, are you still going</p> <p>2 to have any involvement with what you've defined as</p> <p>3 the AACES study, the African American Cancer</p> <p>4 Epidemiology Study?</p> <p>5 A. That is still to be determined as well.</p> <p>6 Q. And am I correct that that study is still</p> <p>7 ongoing?</p> <p>8 A. The funding for that study ended -- I think</p> <p>9 it was 2015/2016. I don't recall the exact date. And</p> <p>10 so we have not collected any data for that study since</p> <p>11 that time.</p> <p>12 We have continued to do analysis of data</p> <p>13 that we have collected, and we are also trying to</p> <p>14 secure funding to continue data collection with that</p> <p>15 study.</p> <p>16 Q. That was going to be my question. Who have</p> <p>17 you made that request to for additional funding?</p> <p>18 A. The grant application was submitted to</p> <p>19 National Cancer Institute.</p> <p>20 Q. And that's who funded the original research;</p> <p>21 correct?</p> <p>22 A. That is correct.</p> <p>23 Q. And you also mentioned a publication that is</p> <p>24 in draft form regarding something called the OCWAA</p> <p>25 Consortium; is that correct?</p>	<p>1 Women's Health Study Cohort, that's out of Boston</p> <p>2 University; the Multiethnic Cohort, which is out of</p> <p>3 California; the Southern Community Cohort Study; the</p> <p>4 Women's Health Initiative; as well as a Los Angeles</p> <p>5 case-control study and a case-control study out of</p> <p>6 Chicago, in addition to the AACES study.</p> <p>7 I think that that's most of them.</p> <p>8 Q. Okay. Are you involved in any current</p> <p>9 research where the intent is to collect new data for</p> <p>10 evaluation of risk factors for ovarian cancer?</p> <p>11 A. Other than what I described to you, that we</p> <p>12 hope to -- that we are applying for funding to</p> <p>13 continue the AACES study, I'm not currently doing any</p> <p>14 data collection related to ovarian cancers.</p> <p>15 Q. Are the coauthors and coinvestigators that</p> <p>16 you worked with on the AACES and the North Carolina</p> <p>17 Ovarian Cancer Study aware of your involvement in the</p> <p>18 talcum powder litigation?</p> <p>19 A. Some of them are. I -- you know, as --</p> <p>20 I have disclosed it on one publication, and if they've</p> <p>21 read it, they are aware. I've discussed it with some</p> <p>22 of them but not all of them. You know, I haven't had</p> <p>23 a conversation, per se, with all of them.</p> <p>24 Q. And you mentioned earlier, with respect to</p> <p>25 some of the new publications that are in draft form</p>

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<p style="text-align: right;">Page 286</p> <p>1 that are currently in the peer review process, that</p> <p>2 they have talc as a -- as a confounding factor under</p> <p>3 investigation; correct?</p> <p>4 A. I think -- I'm going to reread your --</p> <p>5 Q. I can rephrase it.</p> <p>6 I think when you were talking earlier about</p> <p>7 the studies that you have in draft, the question was</p> <p>8 whether or not you had any publications that, you</p> <p>9 know, mentioned talc. And I thought your testimony</p> <p>10 was that talc was listed as a possible confounding</p> <p>11 factor in some of the studies that were in draft form.</p> <p>12 Is that correct?</p> <p>13 A. Right. I mentioned that specifically in</p> <p>14 relation to the infertility and ovarian cancer paper</p> <p>15 that is in draft form, it's -- talc is considered as a</p> <p>16 confounder there.</p> <p>17 In regard to the description of the OCWAA</p> <p>18 study, that paper, we are listing it as one of the</p> <p>19 factors that we are likely to evaluate as a risk</p> <p>20 factor for ovarian cancer.</p> <p>21 Q. Okay. And my question is have you ever</p> <p>22 included asbestos as a risk factor under investigation</p> <p>23 in your epidemiology studies?</p> <p>24 A. If I am not mistaken, I think that we had a</p> <p>25 question on the AACES questionnaire that we asked if</p>	<p style="text-align: right;">Page 288</p> <p>1 did you have a particular paper in -- in mind?</p> <p>2 BY MS. FOSTER:</p> <p>3 Q. Not with 20 minutes left, no.</p> <p>4 A. I'm sorry. I just -- you know, you're asking</p> <p>5 me what did they mean, and I'm not even sure which</p> <p>6 paper might have described something as a weak</p> <p>7 positive association, and I'm not sure who would have</p> <p>8 used that terminology or what was going through their</p> <p>9 mind when they chose those words.</p> <p>10 Q. I assume there are standard epidemiology</p> <p>11 textbooks that you use in your field; correct?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. And what are some of your go-to</p> <p>14 epidemiology textbooks?</p> <p>15 A. Let's see. Ken Rothman's Modern Epidemiology</p> <p>16 is -- different editions of it have been around since</p> <p>17 I was in school 30 years ago. I still refer to that.</p> <p>18 When I have taught the physician assistant</p> <p>19 students, the textbook that we use, which is a little</p> <p>20 bit lower-level textbook, was going to us. Those are</p> <p>21 probably my go-to ones.</p> <p>22 Q. Okay. Do any of the standard epidemiology</p> <p>23 textbooks use terms like "weak," "modest," "strong,"</p> <p>24 to describe associations?</p> <p>25 A. I -- I imagine that in the textbooks, they</p>
<p style="text-align: right;">Page 287</p> <p>1 women had ever been -- ever had a job where they were</p> <p>2 exposed to asbestos, and I don't know that we have</p> <p>3 analyzed that data yet.</p> <p>4 Q. Okay. And you had some discussion with</p> <p>5 Mr. James earlier today about different types of</p> <p>6 terminology that might be used to describe</p> <p>7 associations in the epidemiology literature.</p> <p>8 Do you recall that?</p> <p>9 A. Yes.</p> <p>10 Q. And you were talking about weak associations,</p> <p>11 modest associations, strong associations. Do you</p> <p>12 remember that general discussion?</p> <p>13 A. Yes.</p> <p>14 Q. Now, as an epidemiologist, how would you</p> <p>15 define a weak positive association?</p> <p>16 A. As we have said before, there is no absolute</p> <p>17 cut-point what's a weak association, what's a modest,</p> <p>18 what's a moderate association. I -- I can't put a</p> <p>19 number on that. I don't think any epidemiologist</p> <p>20 could.</p> <p>21 Q. In papers that you've authored that have used</p> <p>22 the words "weak positive association," what do the</p> <p>23 authors mean by that?</p> <p>24 MS. PARFITT: Objection. Form.</p> <p>25 THE WITNESS: I'm -- I'm not -- if --</p>	<p style="text-align: right;">Page 289</p> <p>1 might use that. But the point that I have been trying</p> <p>2 to make is that there is no numerical value to go</p> <p>3 along with those descriptors.</p> <p>4 Q. All right. Switching topics, I want to talk</p> <p>5 a little bit about some of the things that you</p> <p>6 reviewed before you came and gave your deposition</p> <p>7 today.</p> <p>8 Now, you confirmed earlier that you reviewed</p> <p>9 the reports of some of the other Plaintiffs' experts</p> <p>10 in this case; correct?</p> <p>11 A. Yes.</p> <p>12 Q. And you reviewed those all between the time</p> <p>13 that you finished your report and when you came here</p> <p>14 to testify; correct?</p> <p>15 A. That is correct.</p> <p>16 Q. And those were all provided to you by</p> <p>17 Plaintiffs' counsel; correct?</p> <p>18 A. That is correct.</p> <p>19 Q. And how did you choose which of the 22 expert</p> <p>20 reports that you were going to sit down and read?</p> <p>21 A. I knew which of the ones that were more of</p> <p>22 the epidemiology-focused ones. And because that is my</p> <p>23 area of expertise, those were the ones that I went to</p> <p>24 first.</p> <p>25 Also, some of it was, you know, some of the</p>

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<p style="text-align: right;">Page 290</p> <p>1 names that I recognized: David Kessler, former chair 2 of the -- former head of the FDA; Daniel 3 Clarke-Pearson, who is a gynecologic oncologist who 4 was formerly at Duke. He's now at UNC. 5 Q. Do you know Dr. Clarke-Pearson? 6 A. Only by reputation. 7 Q. You haven't talked to him about your opinions 8 in this litigation? 9 A. No, I have not. 10 Q. And you haven't talked to any other 11 Plaintiffs' expert about your opinions in this 12 litigation? 13 A. No, I have not. 14 Q. In reviewing those reports, did you work 15 under the assumption that the authors of those reports 16 had employed generally accepted methodologies in 17 forming their conclusions? 18 A. I -- I assumed that they had. You know, some 19 of the experts, they are names that I know, even if 20 I don't know the individual personally. You knows, 21 Dr. Siemiatycki, Dr. McTiernan, these are very 22 well-known epidemiologists. And so my assumption is 23 that they use generally accepted methodologies. 24 Q. I noticed on the 25 additional-materials-provided list -- I think it was</p>	<p style="text-align: right;">Page 292</p> <p>1 2016, and then updated it to make sure that my report 2 reflected the current literature. 3 Q. Did you do any kind of Bradford Hill analysis 4 of the claimed association between talcum powder usage 5 and ovarian cancer before you were retained as an 6 expert in the talcum powder litigation? 7 A. Doing -- considering the talcum powder -- or 8 considering the Bradford Hill criteria, this is 9 something that we do in our work all the time. It's 10 probably not as formalized as what was done here. 11 As you're aware, I was a coauthor, but I was 12 not the lead author on the AACES study of talc and 13 ovarian cancer. And in regard to the North Carolina 14 Ovarian Cancer Study, that was not the major focus of 15 the -- those papers that reported on talc and -- that 16 reported on talc as a risk factor. 17 So have I done the Bradford Hill criteria? 18 Certainly not in the detail that I have done for the 19 report that I prepared. 20 Q. And when you were -- when Mr. James asked you 21 about the NCI PDQ -- and you all looked at that as an 22 exhibit to the deposition. 23 Do you recall that earlier today? 24 A. Yes, I do. 25 Q. And one of the things that you mentioned is</p>
<p style="text-align: right;">Page 291</p> <p>1 marked as Exhibit 8 earlier. It's a document that 2 I believe you said counsel had prepared, and it has 3 the expert reports on it. It also has a couple of 4 deposition transcripts on it from Dr. Plunkett and 5 Dr. Singh. 6 Did you review either of those before you 7 came and testified today? 8 A. Dr. Plunkett and Dr. Singh, S-I-N-G-H? 9 Q. Yes. 10 A. I don't believe that I read Dr. Plunkett's 11 deposition. I did read a fair bit of Dr. Singh's 12 deposition. 13 Q. When did you do that? 14 A. Probably a week or so ago. 15 Q. Do you have any intention of reading the rest 16 of the reports that Plaintiffs' counsel sent to you 17 after you're closed here today? 18 A. I think that it is possible that I will read 19 some of them, time permitting. 20 Q. You testified about a literature search that 21 you conducted on talcum powder and ovarian cancer. 22 When did you first conduct that search? 23 A. I believe that probably the first time I did 24 that search was not long after I was contacted about 25 possible involvement in this. So probably summer of</p>	<p style="text-align: right;">Page 293</p> <p>1 you see some kind of inconsistency in the way that NCI 2 evaluates data as to whether there is adequate 3 evidence of association or inadequate evidence of 4 association and specifically used the example of the 5 way that that they evaluated the breastfeeding data. 6 Do you remember that? 7 A. Right. What I -- I think the point that 8 I was trying to make when I was asked about that is 9 that the NCI PDQ, they do not describe their 10 methodology. So we're kind of left at what method did 11 they use to evaluate the data? Did they do a complete 12 systematic review, or was it -- was it something less 13 than a complete systematic review? 14 And my point is that, from the information 15 provided, we don't know what methods they used. 16 Q. Have you ever tried to communicate with any 17 of the editorial board members who write the NCI PDQ? 18 A. No, I have not. 19 Q. And you haven't submitted your report to 20 IARC; correct? 21 A. My -- 22 Q. Your expert report. You haven't submitted a 23 copy of your expert report to IARC for their 24 consideration; correct? 25 A. No, I have not.</p>

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<p style="text-align: right;">Page 294</p> <p>1 Q. Being conscious of the fact that we have</p> <p>2 limited time left, I'm going to -- okay. One last</p> <p>3 question.</p> <p>4 In terms of the expert report that you</p> <p>5 provided in the MDL litigation that we've been talking</p> <p>6 about all day today, are all of the opinions that you</p> <p>7 intend to give in this litigation contained within</p> <p>8 that report?</p> <p>9 A. I believe they are, yes.</p> <p>10 MS. FOSTER: I don't have anything else</p> <p>11 for you. So I'm going to pass you on to my colleague</p> <p>12 here. Thank you very much.</p> <p>13 THE WITNESS: Okay.</p> <p>14 CROSS-EXAMINATION BY COUNSEL FOR THE DEFENDANTS</p> <p>15 PERSONAL CARE PRODUCTS COUNCIL</p> <p>16 BY MS. APPEL:</p> <p>17 Q. Hi, Dr. Moorman. You can you hear me okay?</p> <p>18 A. I can, yes.</p> <p>19 Q. And just as a reminder from this morning,</p> <p>20 I am Renée Appel, and I represent Personal Care</p> <p>21 Products Council. And I just have a handful of</p> <p>22 questions to follow up on.</p> <p>23 When did you first form your opinion in your</p> <p>24 expert report that talcum powder products can cause</p> <p>25 ovarian cancer?</p>	<p style="text-align: right;">Page 296</p> <p>1 referring to talcum powder products?</p> <p>2 A. Yes, because all of the literature is -- the</p> <p>3 epidemiologic literature is based on talcum powder</p> <p>4 products, whatever the women reported that they used.</p> <p>5 Q. So is it correct, Dr. Moorman, that you had</p> <p>6 not formed an opinion as to whether pure talc is a</p> <p>7 risk factor for forming ovarian cancer?</p> <p>8 MS. PARFITT: Objection.</p> <p>9 THE WITNESS: Again, my opinion is</p> <p>10 based on the product that women have used, and my</p> <p>11 understanding is that all of the products, they have</p> <p>12 other constituents in them. So they may contain, you</p> <p>13 know, as we have discussed previously, fragrances, for</p> <p>14 example. We have also talked about that there are</p> <p>15 other -- there's evidence to suggest other</p> <p>16 constituents, such as asbestos or possibly heavy</p> <p>17 metals.</p> <p>18 BY MS. APPEL:</p> <p>19 Q. And as to those constituents, would you defer</p> <p>20 to other experts to opine on them, based on the</p> <p>21 examples you just provided, fragrances or heavy</p> <p>22 metals?</p> <p>23 MS. PARFITT: Objection. Form.</p> <p>24 THE WITNESS: You're asking me defer to</p> <p>25 other estimates to opine on them in what sense? Opine</p>
<p style="text-align: right;">Page 295</p> <p>1 A. I think that we have talked about this, that</p> <p>2 the literature on talc and ovarian cancer has been</p> <p>3 accruing since 1982, and to say at what point I formed</p> <p>4 my opinion that it causes ovarian cancer, I can't</p> <p>5 pinpoint that date.</p> <p>6 I can say that I have considered talc as a</p> <p>7 risk factor for ovarian cancer for quite some time.</p> <p>8 Just over my career, it just seems like it has been an</p> <p>9 accumulating volume of evidence.</p> <p>10 Q. Did you hold that opinion before you were</p> <p>11 retained as an expert in the talc litigation dating</p> <p>12 back to the Ingham case?</p> <p>13 A. I think that, yes, I did.</p> <p>14 Q. But, sitting here today, you can't recall a</p> <p>15 specific year or point in time in which you formed</p> <p>16 that opinion?</p> <p>17 MS. PARFITT: Objection.</p> <p>18 THE WITNESS: I think that I've</p> <p>19 answered that. I can't pinpoint at what point that</p> <p>20 I concluded it was a risk factor for ovarian cancer.</p> <p>21 It's been something that I've considered a risk factor</p> <p>22 for ovarian cancer for quite -- quite a number of</p> <p>23 years.</p> <p>24 BY MS. APPEL:</p> <p>25 Q. And when you refer to "it," Doctor, are you</p>	<p style="text-align: right;">Page 297</p> <p>1 on them in what sense?</p> <p>2 BY MS. APPEL:</p> <p>3 Q. Sure. Would you defer to other experts to</p> <p>4 opine on whether those particular constituents in</p> <p>5 isolation are a risk factor for ovarian cancer?</p> <p>6 MS. PARFITT: Objection. Form. Asked</p> <p>7 and answered.</p> <p>8 THE WITNESS: Okay. Those particular</p> <p>9 constituents in isolation are a risk factor for</p> <p>10 ovarian cancer.</p> <p>11 I think that we have discussed this</p> <p>12 previously today, that what is the evidence about, for</p> <p>13 example, the heavy metals in isolation in ovarian</p> <p>14 cancer and limited to -- limited epidemiologic data in</p> <p>15 that regard.</p> <p>16 So I don't know that I'm deferring to other</p> <p>17 experts, but, as I phrased it earlier today, I --</p> <p>18 the -- whether or not these substances are in talc</p> <p>19 products, it adds to the biologic plausibility, but</p> <p>20 the epidemiologic data is based on the talc products.</p> <p>21 That's what the women were exposed to.</p> <p>22 BY MS. APPEL:</p> <p>23 Q. Okay. So in forming your opinion, you are</p> <p>24 assuming that those constituents that you've</p> <p>25 mentioned -- heavy metals, asbestos -- that they are</p>

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<p style="text-align: right;">Page 298</p> <p>1 in the talc powder product that you've rendered an 2 opinion about today? 3 MS. PARFITT: Objection. Misstates her 4 earlier opinions. 5 You might want to read that. 6 THE WITNESS: I -- I am not making, 7 really, any assumptions that these are in the 8 products. My -- you know, my focus on the 9 epidemiologic data is based on the use of the talc 10 products, whatever is contained in them. 11 BY MS. APPEL: 12 Q. In your report on page 30, you've indicated 13 that -- second paragraph, I'm reading from. And I'll 14 give you a moment to turn to it. (As read): 15 "For an association like talc and 16 ovarian cancer, the dose that is 17 most relevant is the amount of 18 talc that actually reaches the 19 fallopian tubes and ovaries." 20 Did I read that correctly? 21 A. Yes, you did. 22 Q. There is, in fact, though, no dose that has 23 been determined that actually reaches the fallopian 24 tubes and the ovaries in any of the studies that 25 you've relied upon; correct?</p>	<p style="text-align: right;">Page 300</p> <p>1 MS. PARFITT: Objection. Form. 2 THE WITNESS: I think that the sentence 3 that followed the one that you're reading is that, for 4 all the pragmatic reasons, we rely on the measures of 5 external application as a surrogate of the level of 6 exposure. There's no way that we could measure what 7 dose of talc reached the ovaries or the fallopian 8 tubes for something that women might have applied over 9 20, 30, 40 years of their lives. 10 BY MS. APPEL: 11 Q. Earlier today, you had discussed the 12 hierarchy of scientific evidence. 13 Do you recall that discussion? 14 A. I don't think that I used that terminology, 15 but I think that -- in talking about the 16 meta-analyses, yes. Yes. 17 Q. In terms of that hierarchy, that you 18 understand that I'm referring to based on that prior 19 discussion, where do cohort studies fall in comparison 20 to case-control studies? 21 MS. PARFITT: Objection. Asked and 22 answered. 23 THE WITNESS: Okay. If you have a 24 cohort study that was able to determine exposure 25 completely and accurately, and follow women for a</p>
<p style="text-align: right;">Page 299</p> <p>1 MS. PARFITT: Objection. Form. 2 THE WITNESS: Let's see. 3 BY MS. APPEL: 4 Q. I can rephrase if you don't understand. 5 A. If you wouldn't mind, please. 6 Q. Absolutely. 7 In the studies that you've relied upon in 8 forming your opinion, none of those studies have 9 determined a particular dose of talc that actually 10 reaches the fallopian tubes and ovaries; correct? 11 MS. PARFITT: Objection. 12 THE WITNESS: Okay. So if we are 13 talking about the epidemiologic studies, there -- no, 14 of course, they did not measure what dose of talc 15 reached the ovaries and fallopian tubes. That would 16 not be feasible to do for -- reflecting the many, many 17 years of use, and also it would be completely 18 unfeasible to do something like that in an 19 epidemiologic study. 20 BY MS. APPEL: 21 Q. But you maintain the opinion that a 22 determination of that amount -- the amount being what 23 talc reaches the fallopian tubes and ovaries -- is 24 important to making a determination about an 25 association between talc and ovarian cancer; correct?</p>	<p style="text-align: right;">Page 301</p> <p>1 sufficient period of time, I think most people would 2 consider that a -- generally a stronger design than a 3 case-control study. 4 But, as I have indicated in my report, you 5 can't rely just on what is the stronger study design, 6 in general. You look -- have to look at the strengths 7 and limitations of the individual studies. 8 Cohort studies have some strengths; they 9 have some notable weaknesses. And I've described 10 those weaknesses several times over the course of 11 today. And I also acknowledge that case-control 12 studies have some weaknesses, but they also have 13 noticeable strengths too. 14 BY MS. APPEL: 15 Q. Is it accurate, Dr. Moorman, that, when you 16 were previously discussing meta-analyses and where 17 that falls on the hierarchy, you were envisioning a 18 pyramid graphic? Is that correct? 19 A. I have -- yes, I have seen graphics that 20 depict it like that. 21 Q. And in those particular graphics, where is 22 cohort studies listed in comparison to case-control 23 studies? 24 MS. PARFITT: Objection. 25 THE WITNESS: As I have said, that in</p>

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<p style="text-align: right;">Page 302</p> <p>1 that pyramid, it is -- typically, the cohort study is</p> <p>2 ranked as a stronger study design. But, again, I</p> <p>3 cannot emphasize strongly enough that you have to</p> <p>4 consider strengths and weaknesses of individual.</p> <p>5 BY MS. APPEL:</p> <p>6 Q. And, Dr. Moorman, have you considered</p> <p>7 publishing your expert report or the findings that you</p> <p>8 arrived at in your expert report?</p> <p>9 A. I have considered it. I have not actually</p> <p>10 done anything to translate it into a manuscript.</p> <p>11 MS. APPEL: Okay. Thank you,</p> <p>12 Dr. Moorman. That concludes my questions.</p> <p>13 THE WITNESS: Okay.</p> <p>14 MR. JAMES: I think there's about eight</p> <p>15 minutes. Off the record.</p> <p>16 THE VIDEOGRAPHER: Going off the record</p> <p>17 at 5:50 p.m.</p> <p>18 (Discussion off the record.)</p> <p>19 THE VIDEOGRAPHER: Back on record at</p> <p>20 5:51 p.m.</p> <p>21 FURTHER EXAMINATION BY COUNSEL FOR THE</p> <p>22 JOHNSON &amp; JOHNSON DEFENDANTS</p> <p>23 BY MR. JAMES:</p> <p>24 Q. Dr. Moorman, in regard to your general cause</p> <p>25 opinion, do you hold the opinion that the evidence is</p>	<p style="text-align: right;">Page 304</p> <p>1 is sufficient to conclude that inhaled talcum powder</p> <p>2 can cause ovarian cancer?</p> <p>3 A. I do not think that there are epidemiologic</p> <p>4 studies that have actually looked at inhaled talcum</p> <p>5 powder in relation to ovarian cancer.</p> <p>6 Q. And so is your answer that -- let me just ask</p> <p>7 this again.</p> <p>8 Do you believe there's sufficient evidence</p> <p>9 upon which you can conclude that inhaled talc powder</p> <p>10 causes ovarian cancer?</p> <p>11 MS. PARFITT: Objection.</p> <p>12 THE WITNESS: I think that I answered</p> <p>13 that when I said that I don't think that there are</p> <p>14 epidemiologic studies that have looked at that. So</p> <p>15 I can't say that there is sufficient evidence.</p> <p>16 BY MR. JAMES:</p> <p>17 Q. Dr. Moorman, are you generally aware that, in</p> <p>18 the African-American population, there is a lower</p> <p>19 incidence of ovarian cancer?</p> <p>20 A. Yes.</p> <p>21 Q. And you have -- have you also seen in the</p> <p>22 literature that there is at least some discussion in</p> <p>23 the literature that the prevalence of talcum powder</p> <p>24 used in the African-American populations may be</p> <p>25 higher?</p>
<p style="text-align: right;">Page 303</p> <p>1 sufficient to support a general cause opinion for all</p> <p>2 subtypes of ovarian cancer or do you distinguish among</p> <p>3 the subtypes?</p> <p>4 A. Okay. The majority of the studies looked at</p> <p>5 epithelial ovarian cancer as a whole. Some of the</p> <p>6 studies did look at subtypes. As we are aware, the</p> <p>7 serous subtype is the vast majority, probably about</p> <p>8 60 -- maybe "vast majority" is overstating it. But</p> <p>9 serous subtypes are roughly 60 percent of ovarian</p> <p>10 cancer cases. And so the studies that looked at the</p> <p>11 subtypes tended to focus on that.</p> <p>12 The other subtypes -- the mucinous, the</p> <p>13 clear cell, and the other subtypes -- they are a much</p> <p>14 smaller percentage of epithelial ovarian cancer. And</p> <p>15 so there's really not adequate data to make a</p> <p>16 conclusion about these subtypes.</p> <p>17 Q. With regard to inhalation, which you touch</p> <p>18 upon in your report, do you hold the opinion that</p> <p>19 inhalation of talcum powder products can cause ovarian</p> <p>20 cancer?</p> <p>21 A. I have stated that that is a possible route</p> <p>22 of exposure to the ovaries. The epidemiologic studies</p> <p>23 have not specifically addressed the risk associated</p> <p>24 with inhalation only of talcum powder products.</p> <p>25 Q. So is there evidence upon which you believe</p>	<p style="text-align: right;">Page 305</p> <p>1 A. Yes.</p> <p>2 Q. If both of those things are true, can you</p> <p>3 provide us an explanation as to why -- why that would</p> <p>4 be the case?</p> <p>5 A. There are many causes of ovarian cancer. And</p> <p>6 some of the risk factors are more common in</p> <p>7 African-American women; some are less common.</p> <p>8 So when you consider the whole spectrum of</p> <p>9 risk factors, you know, breastfeeding, pregnancy, oral</p> <p>10 contraceptive use, to pinpoint one factor like talc</p> <p>11 that is used more frequently in African Americans and</p> <p>12 then say that that conflicts with the lower incidence</p> <p>13 of ovarian cancer that we see in African-American</p> <p>14 women, it doesn't take into account the full spectrum</p> <p>15 of risk factors.</p> <p>16 Q. With regard to the Health Canada assessment</p> <p>17 that we discussed much earlier today, do you</p> <p>18 understand that that assessment is in draft form</p> <p>19 currently?</p> <p>20 MS. PARFITT: Objection.</p> <p>21 THE WITNESS: My understanding is that</p> <p>22 the scientific assessment they did is complete and</p> <p>23 that they are -- that there is a period of comment</p> <p>24 that -- so, I'm sorry, I want to make sure...</p> <p>25</p>

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<p style="text-align: right;">Page 306</p> <p>1 BY MR. JAMES: 2 Q. Do you understand that right now that 3 assessment is currently in the process of a comment 4 period? 5 MS. PARFITT: Objection. Form. 6 THE WITNESS: My understanding is the 7 assessment of the risk that they did, that is 8 complete, and then they are assessing -- or it is in a 9 comment period. And I think that, you know, 10 potentially, if there were some serious concerns 11 raised, they might revisit the risk assessment that 12 they did. But my understanding is what they published 13 is their -- that they felt like the risk assessment 14 was complete. 15 BY MR. JAMES: 16 Q. And to be very quick here, I understand that 17 one of the materials provided to you in the additional 18 materials list was the Taher paper; correct? 19 A. Yes. 20 Q. And do you understand that the Taher paper is 21 one of the items discussed in the Health Canada 22 assessment? 23 A. Yes. 24 Q. And do you understand the Taher paper's 25 conclusion is consistent with the IARC's conclusion of</p>	<p style="text-align: right;">Page 308</p> <p>1 A. Yes, I -- 2 MS. PARFITT: Is the question is that 3 what it says? 4 BY MR. JAMES: 5 Q. That is the question. 6 We had a discussion earlier today about 7 possible cause; correct? 8 A. Yes. 9 MS. PARFITT: Objection. 10 BY MR. JAMES: 11 Q. And, Dr. Moorman, with respect to the 12 Bradford Hill analysis -- 13 MS. PARFITT: Can we stop for a minute? 14 Are you going to tell us when we're off and 15 when we're done? 16 THE VIDEOGRAPHER: Just one minute. 17 MS. PARFITT: Thank you. Oh, that's 18 good. 19 BY MR. JAMES: 20 Q. With respect to your Bradford Hill 21 analysis -- and this should be my last question -- 22 A. Okay. 23 Q. -- you will agree with me that in order to 24 reach a causal conclusion, you must rely on items 25 other than the cohorts, case controls, and</p>
<p style="text-align: right;">Page 307</p> <p>1 possible cause? 2 MS. PARFITT: Objection. Form. 3 Misstates the evidence. 4 THE WITNESS: If you have the Taher 5 paper -- again, just recalling exactly what they 6 stated, I -- too many papers to remember all the 7 detail. 8 BY MR. JAMES: 9 Q. When is the last time you reviewed the Taher 10 paper? 11 A. I would say probably a week or two ago. 12 MR. JAMES: So if Michelle doesn't cut 13 me off, I will hand you a copy of it. I'm going to 14 mark it as Exhibit 31. 15 (Exhibit No. 31 was marked for identification.) 16 BY MR. JAMES: 17 Q. I'll hand you two copies. 18 Okay. And, Dr. Moorman, again, because I'm 19 running out of time, I'll direct you to the precise 20 portion of the article that founds my question. It's 21 on page 49, and it's in the conclusion section of the 22 paper. 23 And you see in the last sentence -- in the 24 last sentence, they report that the data indicates 25 "possible cause of ovarian cancer"?</p>	<p style="text-align: right;">Page 309</p> <p>1 meta-analyses of the epidemiologic literature; 2 correct? 3 MS. PARFITT: Objection. Form. 4 THE WITNESS: The -- some of the 5 Bradford Hill aspects which I think I discussed in my 6 report were the biological plausibility, and so I did 7 rely on literature other than the epidemiologic 8 literature. 9 BY MR. JAMES: 10 Q. And those are necessary as part of your 11 methodology to reach a causal conclusion; correct? 12 MS. PARFITT: Objection. Form. 13 THE WITNESS: They are a consideration. 14 When you do a Bradford Hill analysis, of course you 15 take into account the biological plausibility and the 16 data that may come from cancer biology studies, animal 17 studies, and so on. So yes, it should be considered. 18 MR. JAMES: Okay. Dr. Moorman, thank 19 you for your time. 20 THE WITNESS: Okay. 21 MS. PARFITT: Can we go off the record, 22 please. 23 THE VIDEOGRAPHER: Going off the record 24 at 6:01 p.m. 25 (Recess taken from 6:01 p.m. to 6:14 p.m.)</p>

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<p style="text-align: right;">Page 310</p> <p>1 THE VIDEOGRAPHER: Back on record at 2 6:15 p.m. 3 CROSS-EXAMINATION BY COUNSEL FOR THE PLAINTIFF 4 BY MS. PARFITT: 5 Q. Dr. Moorman, good evening. 6 A. Good evening. 7 Q. I just have a few questions to follow up with 8 counsel for J&amp;J and then for PCPC. 9 Dr. Moorman, you were asked not too long ago 10 by Mr. James a question with regard to your general 11 causation opinions as they relate to does talc -- do 12 talcum powder products cause ovarian cancer. 13 Do you remember that discussion? 14 A. Yes, I do. 15 Q. All right. And I believe the question dealt 16 with subtypes of epithelial ovarian cancer. 17 Do you remember that? 18 A. Yes. 19 Q. All right. And I believe your testimony was 20 that there's really not adequate data to make a 21 conclusion about the subtypes. 22 Did you mean, when you said that, that 23 there's not adequate data to make a conclusion about 24 these other subtypes, that that was because the 25 non-serous subtypes were relatively rare?</p>	<p style="text-align: right;">Page 312</p> <p>1 of the opinion of Health Canada vis-à-vis exposure to 2 talcum powder products and ovarian cancer? 3 A. My -- my understanding is that Health Canada 4 indicated that talcum powder products can cause 5 ovarian cancer. 6 Q. Mr. James showed you a study, the Taher 7 study. 8 A. Yes. 9 Q. And you had an opportunity to review the 10 Taher study as well; correct? 11 A. Yes. 12 Q. Is the Taher study a -- one of the pieces of 13 evidence that you looked at in your review of the 14 Health Canada assessment? 15 A. One of -- it's one of the pieces of evidence, 16 but not the sole body of evidence that they 17 considered. 18 Q. Okay. And is the Taher study also considered 19 a meta-analysis? 20 A. Yes. 21 Q. Okay. For purposes of rendering your 22 opinions in this case, that talcum powder products can 23 cause ovarian cancer, you have shared with the ladies 24 and gentlemen of the jury that you have reviewed 25 multiple meta-analyses; correct?</p>
<p style="text-align: right;">Page 311</p> <p>1 A. Yes, but the bulk of the literature is 2 addressing epithelial ovarian cancer, which includes 3 all of the subtypes. 4 Q. All right. So that the ladies and gentlemen 5 are clear as to what your opinion is, is it your 6 opinion that talcum powder products can cause -- or 7 exposure -- let me strike that. 8 Is it your opinion that exposure to talcum 9 powder products can cause ovarian cancer? Is that 10 your opinion? 11 A. That is my opinion. 12 Q. All right. And does that include all types 13 of epithelial ovarian cancer? 14 A. That -- yes. The data are based -- are 15 largely based on all types of epithelial ovarian 16 cancer. Yes. 17 Q. You were questioned a little earlier, and 18 briefly, about the Health Canada assessment. Do you 19 recall those discussions? 20 A. Yes. 21 Q. Okay. And have you had an opportunity to 22 review the recommendations of Health Canada? 23 A. I have, yes. 24 Q. All right. Based upon your review of the 25 Health Canada assessment, what is your understanding</p>	<p style="text-align: right;">Page 313</p> <p>1 A. That is correct. 2 Q. And I believe you spent time today talking 3 with us with regard to the various meta-analyses that 4 you've looked at, examined, and assessed; correct? 5 A. That is correct. 6 Q. Okay. Based upon the totality of the 7 meta-analyses that you have reviewed, what is your 8 opinion with regard to whether or not they demonstrate 9 that talcum powder products can cause ovarian cancer? 10 A. I think that the meta-analyses show 11 consistent conclusions of a 25 to 30 percent increased 12 risk for ovarian cancer; and that coupled with the 13 other criteria that I considered -- the biological 14 plausibility and the various other Bradford Hill 15 criteria -- that I came to the conclusion that talc is 16 a cause of ovarian cancer. 17 Q. Dr. Moorman, is it fair to say that the 18 method -- method of review and your methodology and 19 the analysis that you performed, for purposes of the 20 preparation of your report and the opinions that you 21 shared today, is the type of methodology and the type 22 of process that is generally accepted in your 23 scientific community of epidemiologists? 24 MS. FOSTER: Objection to form. 25 THE WITNESS: I think that the methods</p>

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<p style="text-align: right;">Page 314</p> <p>1 that I used are what I do routinely in my work as an  2 epidemiologist and that is routinely done when we  3 conduct systematic reviews.  4 BY MS. PARFITT:  5 Q. You were questioned numerous times today with  6 regard to the IARC review of talcum powder products  7 and ovarian cancer. Do you recall those discussions?  8 A. Yes, I do.  9 Q. The IARC committee put out a monograph in  10 2010. Is that your understanding?  11 A. That is my understanding, yes.  12 Q. Do you have any knowledge as to when the IARC  13 committee met to make their findings as it pertained  14 to the role of talcum powder products in ovarian  15 cancer?  16 A. I don't recall the exact date, but I believe  17 that it was quite a bit earlier than that. I'm not  18 sure of the exact date.  19 Q. Okay. But it preceded the monograph that  20 came out in 2010?  21 A. Yes.  22 MS. PARFITT: Dr. Moorman, I have no  23 further questions. Thank you very much. I appreciate  24 it. A long day.  25 MR. JAMES: Dr. Moorman, just a handful</p>	<p style="text-align: right;">Page 316</p> <p>1 A. The most pronounced difference that we are  2 aware of is that smoking seems to be more strongly  3 associated with mucinous ovarian cancer than with  4 other subtypes.  5 But in most -- for most other risk factors,  6 there -- the risk factors seem to be pretty consistent  7 across the subtypes.  8 Q. Are you aware that many clinicians consider  9 the various subtypes of ovarian cancer to be different  10 diseases?  11 MS. PARFITT: Objection. Form.  12 THE WITNESS: I think that clinicians  13 recognize that they -- there are differences. Again,  14 going to pathologists, they can distinguish between  15 them.  16 But in terms of how they treat them, it's  17 my -- I'm not aware of any real difference in how they  18 would treat the different subtypes of ovarian cancer.  19 BY MR. JAMES:  20 Q. And other than smoking, which is the factor  21 that you just mentioned, can you think of any other  22 risk factors that have a different impact on a  23 specific subtype of ovarian cancer as opposed to  24 another subtype?  25 A. That is the only one that comes to mind.</p>
<p style="text-align: right;">Page 315</p> <p>1 more questions. Okay?  2 THE VIDEOGRAPHER: Mr. James.  3 MR. JAMES: Oh, of course.  4 Can we go off just for one second?  5 How long did Ms. Parfitt go?  6 THE VIDEOGRAPHER: Going off record at  7 6:22 p.m.  8 (Discussion off the record.)  9 THE VIDEOGRAPHER: Back on record at  10 6:23 p.m.  11 FURTHER EXAMINATION BY COUNSEL FOR THE  12 JOHNSON &amp; JOHNSON DEFENDANTS  13 BY MR. JAMES:  14 Q. Dr. Moorman, since the IARC published its  15 monograph in 2010, we have had the publication of  16 additional cohort data on the talc ovarian cancer  17 association; correct?  18 A. Correct.  19 Q. With regard to the subtypes issue, do you  20 believe that different subtypes of ovarian cancer have  21 different risk profiles?  22 MS. PARFITT: Objection. Form.  23 You can answer.  24 BY MR. JAMES:  25 Q. And I'm talking about in general.</p>	<p style="text-align: right;">Page 317</p> <p>1 MR. JAMES: That's all I have. Thank  2 you again for your time.  3 THE WITNESS: Okay.  4 MS. PARFITT: Thank you.  5 THE VIDEOGRAPHER: This concludes the  6 deposition of Dr. Patricia Moorman. The time going  7 off record is 6:25 p.m.  8 (Whereupon, at 6:25 p.m., the deposition ceased.  9 Signature was reserved.)  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25</p>

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1 ACKNOWLEDGMENT OF DEPONENT	1 STATE OF NORTH CAROLINA )
2 I, PATRICIA G. MOORMAN, M.S.P.H., PH.D., do	2 ) C E R T I F I C A T E
3 hereby acknowledge that I have read and examined the	3 COUNTY OF ORANGE )
4 foregoing testimony, and the same is a true, correct,	4 I, Sophie Brock, Court Reporter and Notary Public,
5 and complete transcription of the testimony given by me,	5 the officer before whom the foregoing proceeding was
6 and any corrections appear on the attached errata sheet	6 conducted, do hereby certify that the witness(es) whose
7 signed by me.	7 testimony appears in the foregoing proceeding were duly
8	8 sworn by me; that the testimony of said witness(es) were
9	9 taken by me to the best of my ability and thereafter
10 (DATE) (SIGNATURE)	10 transcribed under my supervision; and that the foregoing
11	11 pages, inclusive, constitute a true and accurate
12	12 transcription of the testimony of the witness(es).
13	13 I do further certify that I am neither counsel for,
14	14 related to, nor employed by any of the parties to this
15	15 action, and further, that I am not a relative or
16	16 employee of any attorney or counsel employed by the
17	17 parties thereof, nor financially or otherwise interested
18	18 in the outcome of said action.
19	19 This, the 26th day of January, 2019.
20	20
21	21
22	22
23	23 Sophie Brock, RDR, CRR
24	24 Notary Number: 200834000001
25	25
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4 CASE NUMBER: 16-2738 (FLW)(LHG)	
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